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December 2006

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WINNER

Password Incorrect?

WHEN I FIRST registered for free e-mail in 1997, Net security wasn't a concern. The sign up procedure was a breeze, and the mail service provider wasn't skeptical about my identity, location or even intentions.

Anyone who registered at a free Web mail provider in the last few years knows that this isn't the case today. You're automatically suspected of being a spammer, you have to see the message "This ID has already been taken, please choose another one", and have to squint to recognise letters in a curly font, then type them in correctly to pass the anti-bot test. Finally, just when you think you're done, you have to assign an eight-character password that consists of both upper and lower case letters and at least one number! If all this was done just once, for a single Net ID, it's acceptable, but...

Every site that offers a service, and some that don't, all ask us to register before being able to use them. Common(web)sense says that you should never repeat a user ID-password combination everywhere, so you're left with no choice but to create many different Web identities for your Net pursuits.

In my case it's three Net banking accounts, the Digit forum, two international newswire subscriptions, frequent flyer membership, four Web mail accounts, office mail—the last count stood at 12!

Now which ID goes with which password? If it's not hard enough already, all my Net banking accounts, and some other subscription accounts, require me to change the password at least twice a year—and they refuse to accept previously used passwords! Thus begins the painful process of finding another password that will remain glued to my memory chip for at least 6 months, and permit me to access *my own* bank account details.

Increasing Net threats and web-based crimes have jeopardized the convenience afforded by e-commerce. Can there be a simple solution to this password paranoia?

Thankfully my credit card company (HSBC) has now come up with a smart solution to the security threat. Their gift is a small little digital device on a key chain that throws up a unique 8 digit number every time I press its button. Now I can keep the same user ID and password, and use this seemingly random eight-digit number to act as my security. It's

Deepak Ajwani Executive Editor

> "We have voter identity cards; what stops us from being assigned a permanent Web identity?"

unlikely that someone will guess my username and password *and* also be able to physically steal this device from me.

However, a better solution to the perennial password mess is a one time Web identity assigned by either ICANN or the government itself. We have voter identity cards; what stops us from being assigned a permanent Web identity that acts as our passport to secure and hassle-free Web interactions and transactions?

editor@thinkdigit.com

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YOUR TECHNOLOGY NAVIGATOR

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Each month, *Digit* walks through the technology maze to bring you the most relevant, most researched stories. If you have an opinion about anything published in *Digit*, or about technology in general, please write in to **editor@thinkdigit.com**

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Logitech QuickCam Go
Logitech QuickCam IM

Logitech QuickCam Image
Logitech QuickCam Messenger
Logitech QuickCam for Notebooks Deluxe
Logitech QuickCam Orbit MP
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Digital Passion

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Not everyone is Agent001: whereas he makes a living keeping himself informed, we have our lives to go about. So how do you decide on what to buy? Here's a useful, comprehensive guide

Smart SoHo
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If you want to take the Linux plunge, why you haven't already is most probably because of your love for certain Windows applications. There happens to be a way out. You can make the switch *and* run those Windows apps! Find out how

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Embedded systems is a hot career field. It's been that way, and will remain so for quite some to come, as we see it. The field is an eminently viable career option for software as well as hardware engineers

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Online office suites are a good idea for when you need to collaborate while being separated geographically

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People think "Virtual Reality" is something we're moving towards. Actually, it's already here. Go ahead—live in what is most certainly a virtual world
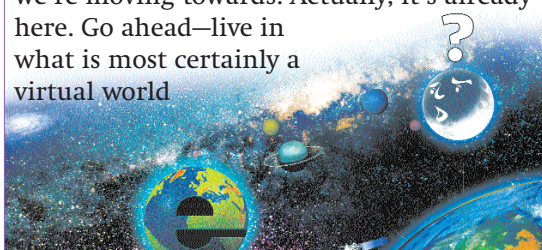
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Web cams are well-nigh indispensable for those with friends and relatives abroad. With broadband trickling in, here's how to stay in touch—the way the world does

186 Game On

Need For Speed: Carbon doesn't fire our engines much, *Battlefield 2142* creates addicts, and *Dawn of War: Dark Crusade* is a half-decent multiplayer game

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Bob Bemer, the multi-faceted computer scientist who saw Y2K coming

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Vandalism on Wikipedia is not good! Here's a site that proposes a novel, chicken-centric approach to the problem

A Digit OS?

The Digit disc interface has changed—not just in terms of looks, but also in principle

What makes a good interface? Making something pretty is not hard; making it usable is! Like the majority of the world, Flash is our weapon of choice for disc interfaces. However, rather than making pretty animations, we decided to use Flash to build the ultimate in usability.

Flash designers, left to themselves, tend to go a little crazy. From interfaces that look like alien
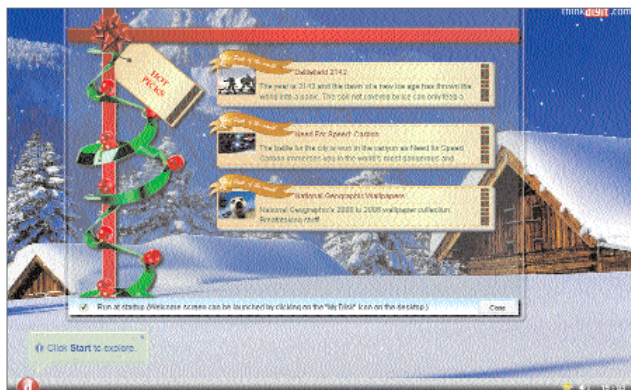
Start using the interface just as you would an OS

Favourites will help you remember what you liked on this disc

ships to bouncing animated shapes, we've seen it all. When we decided that we needed a change, loads of such ideas came up. Somewhere along the line we realised that everyone wants to make things pretty in Flash. Most of the interfaces you will find out there will echo this trend. However, what we end up losing out on is usability...

Which is why we decided that our new interface should ooze user-friendliness. For computer users, which all of you are, what could be more usable than an interface that mimics an operating system?

Digit's Flash OS
Our new interface is designed to look just like your OS, Linux or Windows regardless. We've still kept it pretty looking by shamelessly stealing the OS X and Vista-like transparency, but have kept it simple.

Pop in our CD/DVD and have a look for yourselves. After you accept the terms of use
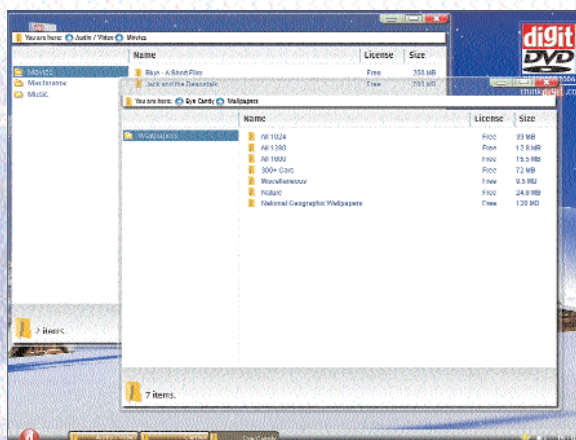
Just double-click on something to see details or install it
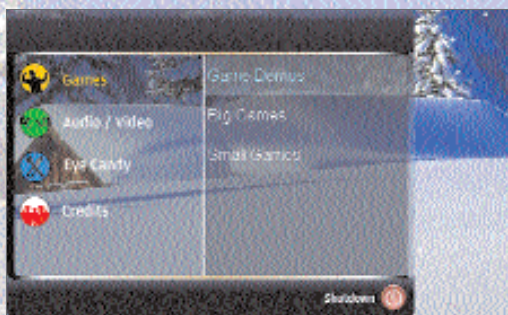
There's even a Start Menu to make you feel at home

in the disclaimer, you will find yourself looking at what is very similar to your Desktop. You can choose whether you want to see the splash screen at startup or not, and then click on the little "d" icon (the Start button) to begin.

Next, you will find yourself looking at a Start Menu, where you will find our sections and subsections. Clicking on one of them will bring up an Explorer-style window with the contents. Double-clicking on anything will open it—just as in a regular OS. You can close or minimise your Explorer windows as you please. When you want to install something, just double-click it and the installer window pops up. Here you can read about the software, and then choose to install it or not.

The "Add to favourites" button is what you should use if you like the software and want to try it out later. In your taskbar (at the bottom right), you will see a star icon (Standard Favourites icon). Double-click on it to open the Favourites menu. Here you will see every software that you tagged as a favourite from *this* disc. Whether it's the next day, next month or next year, just pop this CD back in and you will find that your favourites from this disc are remembered (unless you formatted your computer or deleted the cookie).

We hope you'll like the new interface, and would love to receive feedback and suggestions. Write in to **robert_smith@thinkdigit. com**, or give us feedback on our forum at **www.thinkdigit. com/forum**.

Contents Interactive

GAME DEMOS

Battlefield 2142
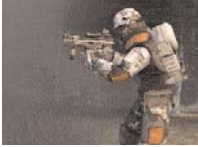
The math is simple and brutal: some will live, most will die. In Battlefield 2142, players choose to fight for one of two military superpowers - the European Union or the newly formed Pan Asian Coalition—in an epic battle for survival

Need For Speed: Carbon

The battle for the city is won in the canyon as Need for Speed Carbon immerses you in the world's most dangerous and adrenaline-filled form of street racing

BIG GAMES

Free!

War Rock

War Rock is a free massively multiplayer online, modern tactical first person shooter (FPS)

- War Rock
- Eye of the Kraken
- GunZ: The Duel
- Tremulous
- Slam Soccer 2006
- Glest

SMALL GAMES

WORMINATOR

Your are the Worminator! A shameless spoof of the Terminator series, this game is fun, and addictive. We almost didn't complete the Digit DVD because we were all stuck playing this for days! A must try, if there ever was one...

- Rick Dangerous
- Cedric and the Revolution
- Doomsday Engine
- The Elder Scrolls: Arena
- The New Adventures of Zak McKracken
- Super Mario War

- Halo Zero

- Secret Maryo Chronicles
- Danger From The Deep
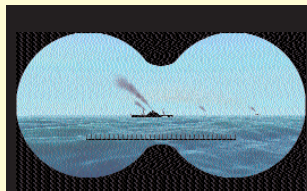
- Advanced Strategic Command
- Asteroids
- Room War
- Xenon 2000
- Dark Oberon
- Dink Smallwood

AUDIO/VIDEO

Movies
Blue - A Short Film

This 23-minute multi award-winning CG short film is, according to its creators: "A sci-fi adventure about a small robot who wakes up all alone on a space station and gets into more trouble than he can handle"

Jack and the Beanstalk

Abbott & Costello's version of the famous fairy tale, about a young boy who trades the family cow for magic beans

Machinima

- Edge Of Remorse - Trailer
- Slightly Later Man
- A Few Good G-Men
- I'm Still Seeing Breen Video Mods Edition

Music
Wired Magazine's Creative Commons CD

A CD given away by Wired Magazine in November 2004. Artists include the Beastie Boys, The Rapture, Spoon, David Byrne, and more

- Now Get Busy
- My Fair Lady
- Wadidyusay?
- One Big Holiday
- Revenge!
- Oslodum
- Relaxation Spa Treatment
- DC 3000
- Fake French
- Looking Up in Heaven
- No Meaning No
- Sister Saviour (Blackstrobe Remix)
- Strummer Recordings/Universal Music.
- Wataridori 2
- What U Sittin' On?
- Oslodum 2004 (includes (cc)
- Action at a Distance

EYE CANDY

Wallpapers
National Geographic

National Geographic's 2000 to 2006 wallpaper collection. Breathtaking stuff!

- Resolution 1024
- Resolution 1280
- Resolution 1600
- 300+ Cars
- Miscellaneous
- Nature

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Digit Archive

23 Past Issues of Digit Archive from January 2005 to November 2006

FastTrack Archive

21 Past Issues of Digit FastTrack from March 2005 to November 2006

Slax

SLAX is fast and beautiful Linux operating system which fits on small (3.14") CD-ROM disc. It runs directly from the CD (or USB) without installing

Google

- Desktop SDK
- Desktop Gadgets
- Desktop
- Web Accelerator
- Picasa
- Hello
- Earth
- SketchUp
- Talk
- Toolbar
- Web Toolkit

ARCHIVE + UTILITIES

PLUS

Tools

Deskloops 2.0

With Deskloops, all the windows you have open are aligned side by side in a loop-like order. No more countless windows arranged one on top of the other in a confusing manner

NVIDIA Gelato

NVIDIA Gelato rendering software allows anyone with an NVIDIA GPU to create stunning images fast. A hardware-accelerated, non-real-time renderer, Gelato was originally designed for the creation of 3D visual effects and animation in feature films

DVD Decrypter 3.5.4.0

Copy protected (encrypted) DVDs to your hard drive with DVD Decrypter.

Just insert the DVD into your optical unit and the program will automatically detect the content

DriverMax 1.2

DriverMax is a free and new program that lets you to easily reinstall all your Windows drivers.Simply export all your current drivers to a folder or a compressed file

- ImageHide 2.0
- Windows Unattended CD Creator 1.0.1
- WinGuard Pro 6.5.14
- NetLimiter 2 Pro

- Perfect Keyboard PRO 6.30
- RadarSync 2007 2.0
- StrokeIt .9.5

Essentials

AutoPatcher XP October 2006 Update

AutoPatcher is a comprehensive collection of patches, addons and registry tweaks that give you peace of mind in the knowledge that your Windows system is up to date, even before you connect it to the Internet

Ultimate Boot CD 3 (Linux Distro)

Assembles over 100 PC hardware diagnosis tools into one bootable CD to analyze and repair hard drives and boot problems. Our Utilities CD is made bootable using this so that you can troubleshoot problems with your PC, such as when it just refuses to boot, or recover data if the hard drive is dying.

- .net framework 2.0
- Avast Home Edition 4.7
- Digit Software Archive 2006 Beta
- Firefox 2.0
- Foxit Reader 2.0 Build 0930
- Internet Explorer 7
- Irfan View 3.98
- K-Lite Mega Codec Pack 1.6
- NVIDIA ForceWare 93.71
- NVIDIA nTune
- Opera 9.02
- Realtek AC97 Audio Driver 3.94
- Spybot Search and Destroy 1.4
- VLC Media Player 0.8.5
- Winamp 5.3
- WinRAR 3.61
- ZoneAlarm 6.5.737

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Productivity Tools

Dynacom Accounting Startup Edition 10.0
It is fast, free, and completely functional.
You can process an unlimited number
of transactions and use it for an unlimited time

Topicscape 1.03
3D Topicscape Personal Edition uses the concept-maps or mind-maps approach to allow ideas and information to be organized, but in place of the usual 2D sheet, it works in 3D

Corel WordPerfect Office X3
Corel WordPerfect Office X3 - Standard Edition is your one-stop office suite. Ideal for large organizations and governments as well as business and consumer users with the need for dependable word processing, spreadsheet, presentation and email solutions

OpenOffice.org 2.0.4
A free, open-source, Office-compatible word processing, spreadsheet, presentation, and drawing suite

AgendaMax Plus v4.2.0.17104
AgendaMax Plus, a personal information manager on steroids, with more features than most calendars

Advanced Time Reports Personal 7.2.127
Advanced Time Reports Personal Edition is an intuitive time tracking & project management solution that will help you increase your billable hours by better managing all your projects, clients and working hours

Mobile Apps

YehBA Instant Messenger
YehBA Instant Messenger is a powerful, user-friendly messaging application that gives you PC Style Messaging capabilities as well as access to popular IMs (Yahoo, MSN, Google)

Portable Apps Suite Beta 1.0
The Portable Apps Suite is a handy collection of the most useful open source applications that can easily fit on a single 256 USB thumbdrive, iPod, portable hard drive, or any other portable media

Quake I
Quake I port for Nokia Series 60 (1st and 2nd edition and other Symbian 6.1 based devices). High Quality render prealpha version

Audacity Portable 1.2.4b
Audacity Portable is the popular Audacity audio editor packaged as a portable app, so you can take your audio files along with everything you need to edit and record on the go

GIMP Portable 2.2.12
It's the handy GIMP image editor packaged as a portable app, so you can work with your graphics and pictures on the go from your USB flash drive, iPod or portable hard drive

SMS Forwarder Lite
With SMS Forwarder Lite you can forward received SMS messages to another mobile phone automatically

WORK

- Corel WordPerfect Office X3
- Topicscape 1.03
- Portable Apps Suite Beta 1.0
- Knight Tales
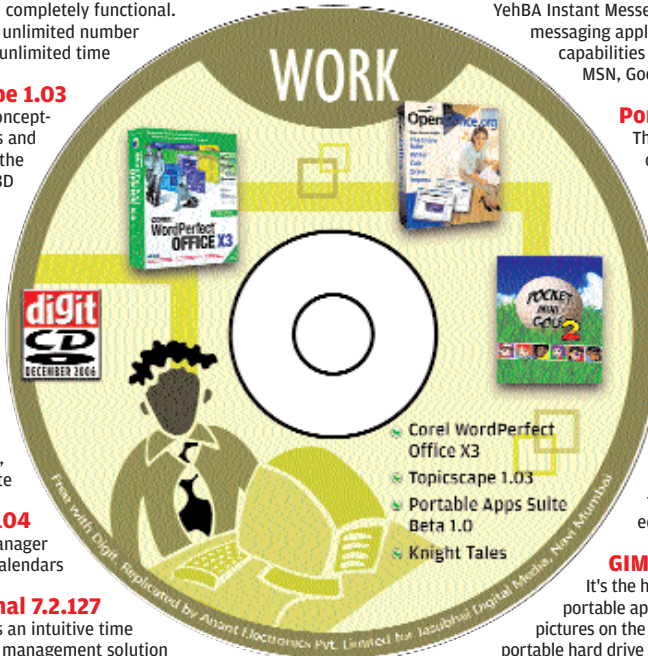
Linux db dyne:bolic

dyne:bolic is a GNU/Linux distribution running from a CD and able to recognise most of your devices and peripherals: sound, video, TV, network cards, firewire, USB devices and more. It is shaped on the needs of media activists, artists and creative individuals, a practical tool for multimedia production. You can manipulate and broadcast both sound and video with tools to record, edit, encode and stream

For any queries regarding the CD or DVD, e-mail **help@jasubhai.com** with "CD/DVD" as the subject. If the subject is not mentioned, your mail might not reach the right person.

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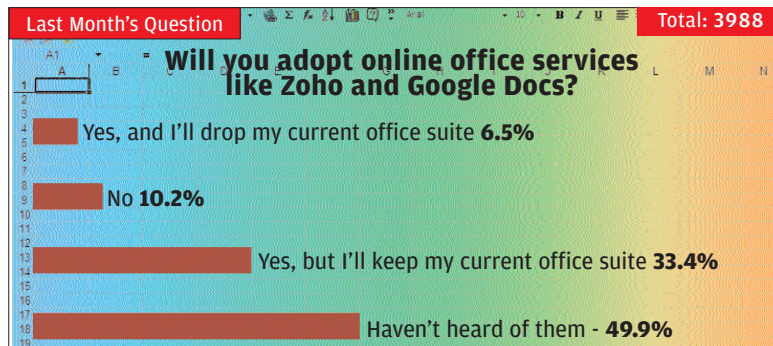
FROM THE DIGIT FORUM (www.thinkdigit.com/forum)

This month, we feature the seond-hand goodies being sold on our Forum by its members.

Click here to go back to **thinkdigit.com**

Second-hand goodies being peddled in Bazaar

What: Dell XPS M1710
Who: desijays
How Much: Rs 65,000-70,000; negotiable
Link: http://www.thinkdigit.com/forum showthread.php?t=41997

What: Powercolor X1800XT 512MB PCI-E
Who: ankurgupta.me
How Much: Rs 20,000
Where: Bangalore
Link: http://www.thinkdigit.com/forum/show thread.php?t=41830

What: PS2 (Silver) + 37 original games
Who: Redshary
How Much: Rs 10,000
Where: Bangalore
Link: http://www.thinkdigit.com/forum/ showthread.php?t=39970

What: All issues of ~Digit~ and former CHIP, including CDs/DVDs since 1999
Who: harikatt
How Much: Rs 240 (shipping extra) for each year's issues
Link: http://www.thinkdigit.com/ forum/showthread.php?t=41505

What: Creative Inspire 2.1 (Model 2400) and Creative SBS 370 2.1
Who: cooltarun
Where: Delhi/NCR
How Much: Rs 1300 and Rs 900 respectively
Link: http://www.thinkdigit.com/forum/sho wthread.php?t=41768

What: Philips 107E56 17inch CRT monitor (black)
Who: caleb
Where: Mumbai
How Much: Rs 2400
Link: http://www.thinkdigit.com/forum/ showthread.php?t=42024

Disclaimer: These are random picks from the forum. *Digit* and Jasubhai Digital Media do not endorse the products, nor do they vouch for the buyers. Please take proper precautions before any money changes hands and deal at your own risk.

Wii May Overcome

Nintendo's much-awaited Wii finally launched mid-November, and Nintendo execs confidently state that Wiis will be floating into the US markets in generous numbers, so Christmas shoppers who missed out on the scarce PS3s can go the Wii way.

Big Brother Is Stopping Your Fights

"Aggression detectors" in UK public places will now alert the cops of any disturbing activity (like a brawl) automatically, by analysing surrounding sounds for anything that resembles aggressive tones. The infrastructure? Just a CCTV camera with a microphone!

Enter

TRUE COLOURS

MS All For Linux... Sort Of

Early November, we choked on our breakfasts with the news that Microsoft and Novell would be partnering on a Linux project—the company has stated that it will henceforth promote SuSE Linux Enterprise to those companies who want to work with both Windows and Linux at the same time.

Considering that the two companies have been as friendly in the past as fire and water, the move sent ripples through the open source community, sparking conspiracy theories ranging from the crazy-snake-man type to the scarily plausible. However, the move does make good business sense for both parties—Microsoft gets itself a Guiding Light™ in the Linux domain (it obviously sees profits in this move), and Novell gets the one-up over arch-rival Red Hat. And yet, something didn't seem right.

As if on cue, Microsoft CEO Steve Ballmer, in the Q&A session following his speech at the Professional Association for SQL Server (PASS) conference in Seattle, came up with some interesting comments. The first of these: "Because of the way the GPL works, and because open source Linux does not come from a company—Linux comes from the community—the fact that that

Illustration **Harsho Mohan Chattoraj**

product uses our *patented intellectual property* is a problem for our shareholders. We spend $7 billion a year on R&D, *our shareholders expect us to protect or license or get economic benefit* from our patented innovations." (We've added the italics for emphasis). The paranoia we were talking about last month seems not to have been unfounded—all those rumours you've been hearing about stands softening towards Linux and open source have been eyewash. The essence of the statement is that if you're using Linux, you're stealing from Microsoft, unless you give them money for it.

However, there is *some* friendliness—"... we want SuSE Linux to have the highest percent share of that, because only a customer who has SuSE Linux actually has paid properly for the use of intellectual property from Microsoft." And "We are willing to do the same deal with Red Hat and other Linux distributors; it's not an exclusive thing".

Raging tempers in the open source community aside, there are more sinister implications to this than it might seem. Tech companies have been suing each other for Intellectual Property infringements as a seeming side business, and with this attitude, every single Linux user might end up a possible target for Microsoft's crack team of lawyers. Scary, isn't it? Interestingly, though, Ballmer didn't state any specifics as to what "patented intellectual property" Linux has stolen from them.

WinZip Vulnerabilities

The Problem

A serious problem has been reported in WinZip, which is caused due to unspecified, insecure methods in the FileView ActiveX control, which WinZip 10.0 uses. Users of WinZip 10.0 who are tricked into visiting, or accidentally venture into, a malicious Web site could suffer. A malicious Web site exploiting the vulnerability could compromise the computer and let a hacker install malware such as a backdoor Trojan. This has been rated as "highly critical" by security firm Secunia—its second-highest rating for threats.

Who Is Affected?

If you have version 10.0 with a build lower than 7245, then you have cause for concern. WinZip users who have versions 9.0 or older are not affected.

What To Do

WinZip has come out with a critical patch for all systems using WinZip 10.0. The patch, WinZip 10.0 build 7245, is available free of charge to all registered users of WinZip 10.0 Standard and Pro.

Registered users can download the patch from **www.winzip.com/wz7245.htm**, and those still evaluating can download the evaluation version of WinZip 10.0 build 7245.

In order to preserve your existing WinZip registration information, do *not* uninstall WinZip 10.0 before installing the new build.

FREEDOM!

iTunes Without The iPod (And The iPod Without iTunes)

Some people are just 'pod fanatics. When Stanford University partnered with Yahoo! to offer free Yahoo! Unlimited subscriptions to their students, the response was lukewarm. Some students didn't even bother checking it out—they were just too attached to their iPods, which were incompatible with the music you could download from the service. But all that's about to change.

Jon Lech Johansen, a 22-year old hacker, previously famous for having cracked DVD encryptions as a teen, has now come up with a piece of software that will not only let competing music players play iTunes content, but will let iPods play DRM'd music from stores other than the iTunes Music Store. No, he didn't crack Apple's FairPlay DRM—he just built something that mimics it, so no laws have been broken. Online music stores will now be able to license the technology through DoubleTwist Ventures and make their content 'pod compatible, and player manufacturers will be able to include it on their devices to make them iTunes compatible.

Apple hasn't made any official comment yet, but the move ensures one thing for music fans everywhere—freedom. Competition is now going to get fiercer, and if this is a sign of things to come, the "buy my player, use my music store" lock-in attitude is going to be a thing of the past. Competing players, including Microsoft's new Zune, will now have a better chance at grabbing a slice out of Apple's 75 percent market share.

When RealNetworks offered song downloads that would work with iPods, Apple was quick to modify its technology to block those songs out. Could that happen here as well? Says Monique Farantzos of DoubleTwist, "We followed a different strategy than RealNetworks. We don't believe it is practical for Apple to block this." Then again, how many times have we accused Apple of being practical—especially in matters as sensitive as this?

SEEING RED

IE 7 Goes Green, But Only For Some

Now in its final release, IE 7 has been all about two things—more user-friendliness, and more security. The twain meet with its phishing filter—the browser verifies sites using a database of malicious sites, plus a few basic heuristics, and pronounces it safe or potentially harmful, as the case may be. All hunky-dory, and in the interest of the public, so chances are you might just escape the old phish.

Phishing sites usually impersonate big companies—your Citibanks and Yahoo!s and what-have-you—to gain access to your information, so it seems logical that Microsoft would want to protect the customers of such companies. In an update planned for January, the IE 7 address bar will glow green when you're on the real company Web site,

---

HOT

The iPod

Despite stiff competition from all sides, Apple's iPod still remains the most popular portable media player and dominates the digital-sound world. Though it suffers from few feature glitches, it's still the champion of portable music!

NOT

Zune

Microsoft's Zune media player is suffering the ill-effects of being over-hyped. Touted as the "iPod killer," it has failed to live up to expectations. Compatibility issues abound, and we're left still awaiting the device that will free us from i-Tyranny!

❓ **One Silly Question**   **"What tech name would you give your pet?"**

'GPS' sounds real techie!
Manohar

I'll call him 'chip'
Prerna Dawda

How about 'camera'?
Reedima Indulkar

'Intel' sounds like a good name
Rajeev

It's got to be 'Google'!
Roshan Patel

SPAIN
A Spanish Judge shocked the music industry by letting go an individual convicted of downloading music by calling it "behaviour to obtain private copies and not gain wealth"

CHINA
Intel has signed an agreement with the Ministry of Education to donate more than 10,000 PCs to rural schools and train teachers who will in turn help to educate more than 100 million students in rural areas in the next five years

UNITED STATES
A panel of three judges in a Superior Court ruled that viewing child pornography on a Web site without deliberately saving it to a computer is not a crime

ISRAEL
Intel has announced the opening of a multi-core processor technology laboratory to develop and run tests to allow Independent Software Vendors to benchmark their applications on the Intel processors

VIETNAM
Intel announced plans to build the world's largest chip assembly factory in southern Vietnam, raising its investment to $1 billion

AUSTRALIA
Australian Government launched AU$4 million ICT apprenticeship program in Canberra for school leavers as one of the measures to reduce the shortage in current technology skills

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so you know you can go ahead and participate in whatever transaction you want. This Online Trust Indicator, as it's called, will initially be given only to big corporations—causing much dissent with smaller businesses. The effect is that even if your site is as harmless as a daffodil, you might not get the green glow. "It un-does what I think is really one of the greatest things about the Internet: the ability for anyone with a good idea and a little capital to compete with Amazon or Overstock.", says Gregory Waldron, chief executive officer at Visual Water, a seller of water features and fountains.

In the wake of the poor supervision of SSL security certificates, the Certification Authority (CA) / Browser Forum is still formulating a set of guidelines as to what will really constitute a trustworthy site, so Microsoft might just be jumping the gun here. They're well aware of this, but stress that since big corporations are phishing targets, the move is necessary.

Not everyone has been critical—officials at Opera agree with the strategy, stating that users need to be protected, and this approach will ensure that fewer people part with their private data. And ultimately, it's the user that matters. Our recommendation: the best way not to get phished is to never stop using your common sense.

IT'S BACK

MP3.com Resurfaces In New Avatar

Back when MP3 was a phenomenon and broadband happened only to foreigners, there was a site called MP3.com, which let people download music—sometimes quite good—by little known bands, unlimited and free of

Three Incredibly Useful Sites

Fonts, digital cameras and Photoshop help

Digicamhelp

www.digicamhelp.com
The site has a collection of easy-to-understand articles, tips, and tutorials on making optimal use of your digital camera. With the resources available, you can learn to take pictures, use various features, take proper care of your new gadget, learn about accessories, and also grasp basic to advanced image editing. There's also a forum—and you can't miss the featured photo on the main page!

DaFONT.COM

www.dafont.com
This is a font site from where you can browse and download fonts for free. You can preview fonts at the site by typing in text. There's a "top 100" link, and there's a list of categories—Fancy, Foreign Look, Script, and so on. You can obtain tools for font management, creation, and conversion (between PC and Mac), as well as tools for font repair—and more!

Photoshopsupport.com

www.photoshopsupport.com
Available here are tutorials, tips and tricks, training videos, and resources such as links, books, articles, and more to find out more about everything Photoshop. There are links to free fonts, free stock photos, and much more that can be used in conjunction with Photoshop.

Photograph **Team Digit**

Each month *Digit* will carry a caption for a photo. Come up with something funnier, and beat the *Digit* team at their own game! Entries accepted by the **20**th of this month.
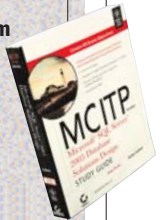
charge. Following the Dark Ages of copyright lawsuits and debates on the legality of distributing MP3s over the Internet, the site underwent a transformation, providing

editorial content on new bands, with the ability to stream a few tracks here and there. If you liked a song, you'd be linked to an online music store from where you could pay for and download the song to listen to offline.

In the mean time, MySpace has been

garnering popularity, providing struggling bands with a platform to promote their music and interact with their potential audiences. MP3.com has decided that this just

won't do, and the shiny new site will let artists upload their music for free download once again. It will also give artists features that will allow them to see how they rate against others on the site, in addition to letting them know where their fans hail from (generalised areas of

course—no privacy breached here). The artists' music will feature alongside streams from the already established lot, giving them the ability to actually compete with the best in the business.

MP3.com has been a favourite for long—it taught us that there's good indie music out there, and that it's easy to access. One can only hope that it isn't too late for it to draw new bands away from MySpace.

BACK TO THE WIKI
China Lifts Wikipedia Censor, Then Bans It Again

After a year of being blocked, Wikipedia was once again accessible to the Chinese public, though not fully. China's Ministry of Information didn't

comment on whether the still-inaccessible pages are the result deliberate action. The unblocking wasn't even universal—there were reports that some parts of China still didn't have access to the site.

Wikipedia was blocked in October 2005 over concerns about pages that openly discuss the political situation of the country—notably the disputes over Tibet and Taiwan. Nothing new—China has been using very sophisticated Internet filters that prevent access to any site or Web page that might instigate discussions or dissidence among its teeming millions. In fact, even games that recognise Tibet and Taiwan as independent nations are banned in China.

The easing of the ban was short-lived, though: just a week after people were able to access Wikipedia, it was reported that the site had been blocked again in several parts of the mainland. Sceptics had already voiced

Spot The Naught

Bala Rao Vs. Munish Tahiliani

This time round, it was a quiz of sorts: spot two incorrect statements from amongst five.
(1) DOS was the first GUI from Microsoft; (2) "URL" is related to the Internet; (3) Linux is an OS; (4) "IBM" stands for Informational Business Machines; (5) "Browsing" is the same as surfing. OK, we know you know (1) and (4) are wrong, and we also know you know we should have called it "GNU/Linux." But what about Bala and Munish?

"But I know very little about computers," Bala whined. We told her she didn't need to know too much, and that sort of reassured her. So was DOS a GUI? Some thought later, she nodded. Ouch! About "URL," she was a lot quicker. Linux was certainly an OS, and the "I" in IBM was not "Informational." Cool. Surprisingly, the fifth got Bala thinking, and worse, she decided there was some kind of subtle difference between browsing and surfing! So that's a 3 out of 5... as good as guesswork, and we were left hoping Munish would do better.

Munish Tahiliani was actually eager to take the test, but we soon figured he wasn't a *Digit* reader: the first question had him stumped. But he rightly pronounced DOS a non-GUI, and was quicker at the second. "Is Linux an OS" elicited a skyward look from him, and we had to gnash our teeth when he said it wasn't. "IBM" for him was guesswork. Wrong guesswork. And finally, he did figure browsing and surfing were the same, so that was again 3 out of 5. When will people learn to start reading *Digit* and stop having to guess?

fears that the lifting of the ban would be temporary. However, it wasn't clear if the site was inaccessible due to technical problems or because government censors had re-blocked it.

Still, is Big Brother on the way to becoming friendlier? Does the move mean that Chinese Internet users will eventually be able to surf the free Net the way the rest of us do? Did all that China-bashing really work? Hardly. China's never been a nation that cared about the international community's opinion of it, and this time it's no different. Says Julien Pain, who runs the Internet Freedom Desk at Reporters Without Borders, the move

has more to do with giving Chinese users access to information that could help give them a competitive edge in business, and has nothing to do with looking better in the eyes of the world. So it's world domination they're after; now *that* sounds more like China.

LEGAL EAGLE DEPT.
Adobe To Go After Microsoft

Everyone's suing everyone else. We're pretty sure that you'll be seeing at least one such

story in every issue; in the ring this time are two of the world's biggest software companies. Adobe will be watching Vista's end-January release more closely than anyone else, more than hinting at the possibility of an upcoming suit against M-Dollar for shutting out rivals.

The uproar is over the XML Paper Specification (XPS), which Windows Vista and Office 2007 support by default. XPS is another document format built for easy transportation—the same idea that powers Adobe's largely ubiquitous Portable Document Format (PDF). When Adobe first went crying to approached the European Commission (EC) over antitrust concerns, Microsoft responded by having XPS converted to a standard compliant with open source licenses, freeing *anyone* to bundle the format. MS—1, Adobe—0.

Adobe will continue to work with the EC to determine whether Microsoft's decision to bundle the format is an abuse of its top dog position in the office productivity market.

The EC has been after Microsoft for ages over the embarrassment of features bundled in Vista, insisting that they shut out competing products and hence violate antitrust laws. Less then two months before the launch, Vista still hasn't got the green signal from the EC, but will be launching on time nevertheless, thanks to some "constructive dialogue" over the issues that so concern us all.

You'd think that Adobe wouldn't have anything to worry about, what with the PDF format's humungous popularity, but we see their concerns—while Microsoft can't be accused of being the first to bring out a concept, their near-inexhaustible resources and dogged persistence have often brought the best to their knees.

A bit of trivia: Microsoft was going to bundle PDF support with Office 2007 as well, but extensive bickering with Adobe over licensing the technology made them drop those plans mighty quick.

BLINK AND IT'S GONE
PS3 Sells Out In Minutes

Even if you live under a rock, chances are that someone's lifted it long enough to tell you about the Sony PlayStation 3. The insanely hyped and long delayed console finally hit Japan and US markets mid-November, with shoppers queuing up outside stores at least two days in advance braving rain and aching feet. And then there is the unfortunate soul who was shot at 3 a.m. while in the line for the console—because he refused to part with his well-earmarked dough.

The last console vanished from the last shelf just minutes after shutters opened, leaving many empty hands and souls. The frenzy

Crysis

Crysis, a First Person Shooter game has been long awaited by the lovers of *Far Cry*, and the Web is agog with screenshots, discussion, and general speculation! The game, like many others, is based on science fiction (aliens and stuff). *Crysis* uses the CryEngine 2 graphics engine (*Far Cry* uses the CryEngine). CryEngine 2 is the first engine that uses DirectX 10, though Crysis can run both on DX9 and DX10. For all you gamers who know what it all

means, *Crysis* uses dynamic day/night cycles, sunrays and diffuse transmission, real-time soft shadows, soft particles, interactive/destructible environments, volumetric clouds, and more! (*www.crysis-online.com*)

Crysis adds to the thrill by making use of some fascinating weapons. The facial expressions of the characters sync well with their voices. The AI has been claimed to take the game to a different level.

ALIPR

What is it?
ALIPR stands for Automatic Linguistic Indexing of Pictures—Real time.
It is a software that names pictures. Given an image, ALIPR can automatically give an appropriate name to it. The vocabulary is currently limited to 330 words.

Who is behind the software?
It has been developed at Penn State University by Professors Jia Li and James Z Wang.

Why is this important?
Because it is a major advancement in the automation of tagging pictures. ALIPR's success is due in part to its vast database of colour, texture, and images.

Where will it be used?
Wherever loads of pictures are handled on a regular basis, and people don't have the time to tag them all—such as, for example, in scientists' and researchers' work.

When can one start using ALPIR?
ALIPR is currently waiting to be patented. For now it's free, and can be used by anybody. Just head to www.alipr.com. Give it a picture, and ALIPR will make 15 suggestions. You can upload an image and "alipr it." To help ALIPR learn, you can tick-mark correct suggestions, add your own tags, and make your image searchable!

How successful is it?
For a picture of two men playing polo, five of the names suggested were "animal," "sport," "people," "horse," and "polo." This picture can be found at **www.alipr.com/about.html**. Recently, ALIPR was tested on 5,411 images on Flickr. For half the images, the first word ALIPR generated figured in the users' tags!

is mostly due to the hype about its cutting-edge technology, including the Cell processor—the "supercomputer on a chip" (you can read about it in *Digit* November 2006)—and the Blu-Ray DVD drive. However, there's another important factor that contributed to the disappearance—only 400,000 units were shipped to the US, leaving a huge vacuum in gamers' hearts for Christmas. Sony needs the PS3 to sell spectacularly to counter the effect of the year's battery recalls, and speculation abounds that if they aren't able to fill this distribution gap soon, customers might just wander into the open arms of the Xbox 360 or the also newly-launched Nintendo Wii.

Prices for the PS3 start at $500 (Rs 23,500) and go up to $600 (Rs 28,200), making it considerably more expensive than the Xbox 360, and nearly double the price of the Wii. Still, Sony doesn't seem to be worried about the price, what with all the "future-proof" technology it's giving gamers in its console.

RED HAT BEWARE

Oracle And Unbreakable Linux

Rumours of this have been floating around for a few months now—Oracle has finally hit at rival Red Hat with their own Linux support programme called Oracle Unbreakable Linux. At the annual Oracle User Conference, CEO Larry Ellison announced their intentions of providing enterprise-level support for Linux along the same lines that they do for their database and application server suites.

Red Hat, Ellison pointed out, only gives support for the latest version of its distributions, so if you have a problem with an older version, you need to invest in a product upgrade. Unbreakable, on the other hand, is a programme that will provide bug fixes and support for all releases of Linux—past, present and future.

Is the already fragmented Linux market headed for another fork in the road? Oracle's Chief Corporate Architect, Edward Screven, insists not. Unbreakable will be compatible with Red Hat Linux, thus making it easier for Oracle to woo Red Hat's existing customers. The service will even come at a lower price—$99 per year per PC, with a special 50 percent discount if you sign up before January 31, 2007.

With no better way to make money off Linux than support, this is sure to spark of a very entertaining rivalry—something we've come to count on Larry Ellison for.

FINALLY

The PIC Is Dead

Don't know what AMD's PIC is? Neither do many people the world over, which is why this 2004 project has finally been canned by the chip manufacturer. The Personal Internet Communicator was supposed to be the ultimate low-cost PC for developing nations like India, but has gone the way of other such flops as the Simputer.

So little was the interest in the device that when AMD gave away one to every attendee at the World Congress on Information Technology in May, many PICs lay unclaimed days after the show. To get an eyeful of all the problems with the PIC, pick up your copy of *Digit*, June 2006, but the gist of the matter is that it offered too little to justify its $185 price tag.

Even as India snubs Nicholas Negroponte and the One Laptop per Child (OLPC) project, the mission to provide emerging markets with affordable computing doesn't seem to slow down. We don't delude ourselves into believing that this is all philanthropy—clearly they're trying to grab a bite out of a much larger audience than the one that can afford more expensive PCs—but really, do the poor and hungry need *computers*? ■

STANDING TALL
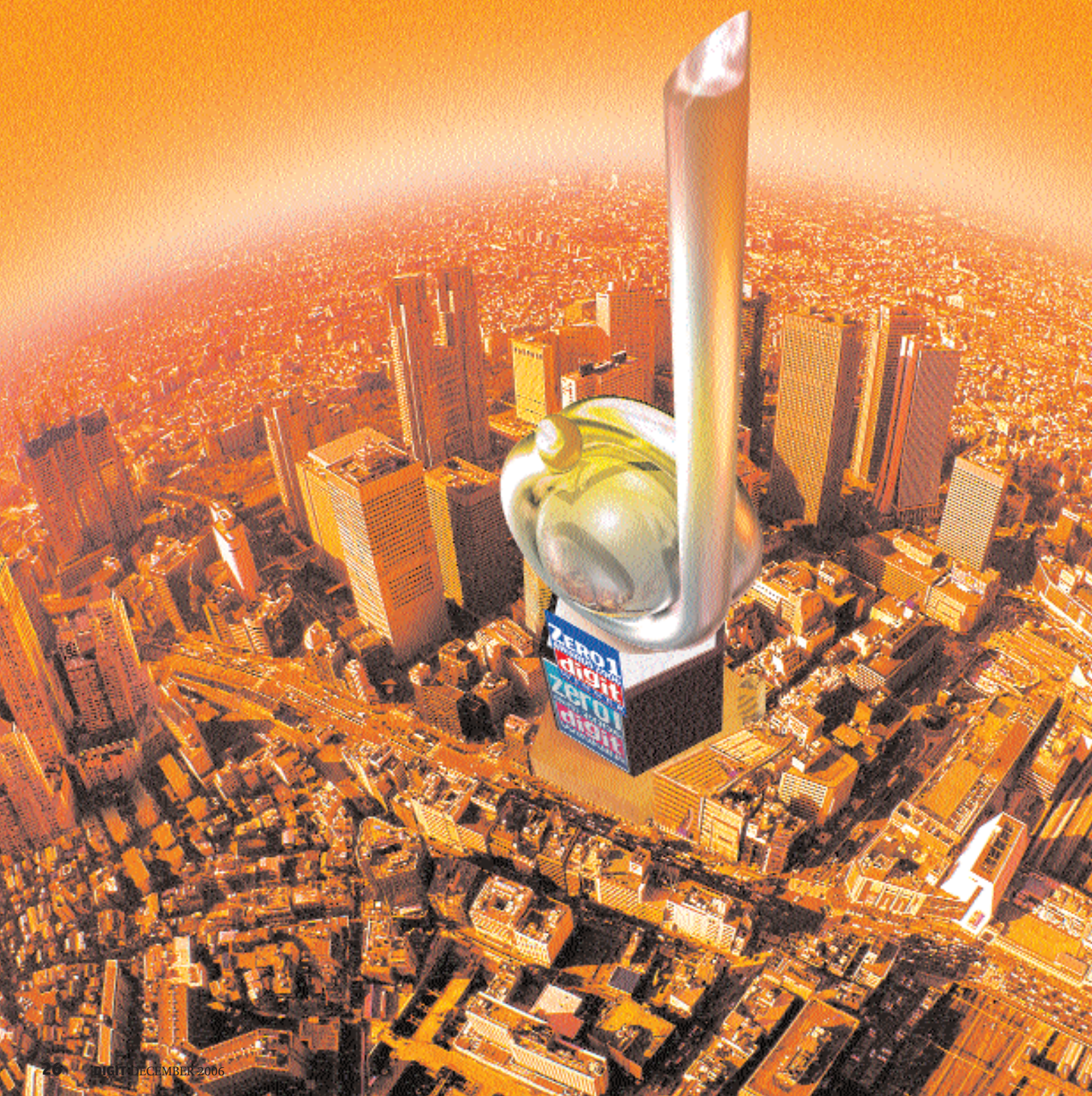
The Seven Wonders of the World stand testament to the spirit of man. History calls them monuments... colossal achievements. And that's how you, our readers, have come to perceive what features in Digit's Zero1 Awards. Each of our comparison tests is a race, with its winners and losers. Here are those who took their rightful places on the pedestal this year

Vendors, readers, and even we writers think of "being featured in the Zero1 Awards" as an achievement. The products that win these awards are monoliths in their category, looking down condescendingly upon those that didn't make it. Another way of looking at it is that the Zero1 Awards are beacons, attracting all yet rewarding only the most deserving.

Each product category is fiercely competitive, each product a potential winner, every entrant just as important as the next. We encourage battle: we revel in it, for this isn't about bloodshed, but providing choices for our beloved readers—the IT shoppers of the nation. Performance, reliability, value for money—the battle-lines are clearly drawn, and it's up to the contestants to put up their best. We stand watching.

Then, at the end of the year, it is our practice to revisit all the categories. We test the products that didn't make it to the comparison tests at the time they were held—maintaining our parameters and standards, of course. If any new Gold winners emerge... just so much the worse for the former winner! And if our Gold winner manages to hold firm in the face of new challenges, it's bestowed with a Zero1 award.

This year saw a number of revolutionary products stealing the show—upsetting rivals and establishing dominance. We've seen dual-core processors become mainstream. Falling prices make them affordable to almost everyone. Intel's Core 2 Duo range of processors completely dominated the proceedings, topping our processor charts and upsetting the long-standing winners, the AMD 64-bit Athlons and X2s. We've also seen AMD changing platforms and moving to DDR2 memory with their AM2 socket processors. As we'd expected, the mainstream memory market bids a hasty farewell to DDR as DDR2 takes over.

The GPU market has been at its evolutionary best. We've seen new performance kings emerge throughout the year in this, the most volatile of product segments. We've seen NVIDIA's attempt at two GPUs on a single graphics card, or rather two PCBs—their 7950GX2. We've also seen GDDR4 enter the graphics arena, onboard ATI's X1950XTX. The biggest splash was perhaps the last to be made: NVIDIA's DirectX 10 card, the 8800GTX, emerged, featuring enough innovation to be called revolutionary. Needless to say, ATI will soon respond. The lower tier of graphics cards now reflect true value for money, with such heavyweights pushing the prices of those below them still lower.

Far from the silicon battlegrounds, we've seen fatter platters: hard drives well and truly crossed 500 gigabyte territory. Perpendicular recording became mainstream this year, bringing about size and performance explosions—with some of the biggest increments in performance since SATA 1.

A whole new breed of motherboards aimed at the enthusiast but priced for mid-range buyers surfaced this year, vying for your attention. These feature-rich hunks of silicon now sport a serious amount of visual appeal, with manufacturers adding good looks—chunky, fan-less heatsinks, LEDs, and more—to what used to be a relatively drab product category. Keeping in mind the user who wants to flaunt is something that seems to be paying off.

2006 also saw widescreen LCD monitors make their mark, and gain acceptance over regular LCDs, especially in the home entertainment segment. Prices have also dropped drastically: a 19-inch widescreen LCD monitor today costs what a 17-incher demanded a year ago.

All devices keep getting smaller, as you know well: witness the entry of the LCD monitor itself, and the diminutive inkjet printers of today. In fact, a whole new breed of compact photo printers means you can now carry your printer with you without sacrificing on printout quality.

The cell phone market is booming the most: it has seen tremendous spurts of growth. Think newer technologies and cooler-looking handsets. The Nokias and Sony Ericssons of the world have locked horns firmly over the turf called India. This can be nothing but a good thing for us, the consumers: we've seen truly smart phones trickle into mid-range budgets. We're also seeing digital-camera-like quality on cell phone cameras—speaking of which, cameras have scaled the upper megapixel range. We're seeing bigger, better features on smaller cameras that don't cost as much.

What were once just MP3 players have become the media players. "All-in-one" is the trend: these devices serve as your jukebox, photo album, cinema, and more! Then, Flash drives have scaled up to eight gigabytes, something that has favourably affected prices.

A wonder of a year, then, with increasing amounts being set aside by households and corporates alike for IT purchases. On to the *Digit Zero1 Awards* for 2006, and those masterpieces deserving enough to have reached the pinnacle of pinnacles in the fascinating world of tech products. There is no place for seconds here—neither for also-rans.

CELL PHONES

Feature-Rich Phones

Nokia N80

Specifications

OS: Symbian S60 3rd Edition; weight: 134 grams; 262K (18-bit) colour; resolution: 352 x 416; 3.0 MP camera; 40 MB internal memory; MiniSD

Our Verdict

The changing cell phone market has seen a slew of models since our test way back in June this year. With a good 3.0 MP camera, excellent MP3 playback, and a large, clear screen the N80 is our Feature-Rich cell phone of choice. With one of the best screens we've come across (352 x 416 pixels), you'll make small excuses to stare at that screen...we did!

This quad-band phone is based on Symbian's latest, 3rd edition of their S60 9.1 OS, and has all the important features like Wi-Fi, EDGE, and 3G. Nokia strikes gold with a good balance between flaunt value and functionality.

Runner-Up: Sony Ericsson K790i

Mid-Range Phones

Sony Ericsson K750i

Specifications

Weight: 99 grams; 262K (18-bit) colour, resolution: 176 x 220; 2.0 MP camera; 38 MB internal memory; MS Duo/Pro expandable

Our Verdict

The winner of our "feature-rich" category in June this year receives a healthy price drop, finally bringing it under the Rs 10,000 mark. The K750i now trounces the other mid-range cell phones. With a great-sounding music player, a good 2.0 MP camera with autofocus, and a wide range of features found on costlier phones, it's hard not to recommend this one to anyone looking for a cheaper phone big on features. All these features are crammed into a small form factor, making the K750i irresistible.

Runner-Up: Motorola L7

Budget Phones

Nokia 6070

Specifications

Weight: 88 grams; 65K colours (16-bit), resolution: 128 x 160; VGA camera (.3 MP); EDGE support

Our Verdict

Successor to the Nokia 6030, the 6070 sports a very similar look to the model it replaces, while adding a tiny amount of onboard memory. The slightly larger, higher-resolution screen will be welcome, while the inbuilt FM is a nice touch for those on a budget. We like the 6070 because it's simple and sturdy—very suitable for those who need a cell phone but don't want to pay extra for features they might not use.

Runner-Up: Nokia 2600

DIGITAL CAMERAS

High-End Cameras

Sony Cyber-shot DSC-W50

Specifications

6-megapixel CCD sensor; maximum image resolution: 2816 x 2112; 3x optical zoom, 2.5-inch LCD viewfinder; battery form factor: Li-ion (NP-BG1) rechargeable

Our Verdict

The best of the "Shooting Stars" this year was the W50 from Sony. Sleek as hell and built like a brick (we mean that in a good way!), this is one camera that oozes attitude and style. Once you get past the incredible feel of this shooter in your hand, you'll see it also sports brilliant camera optics.

The W50 produces excellent images—clear and crisp, with great detail. Excellent ergonomics, too. We loved the ultra-large LCD viewfinder—it's as clear and crisp as the images this beauty captures!

Runner-Up: Samsung Digimax S800

Mid-Range Cameras

Sony Cyber-shot DSC-L1

Specifications

4-megapixel CCD sensor; maximum image resolution: 2304 x 1728; 3x optical zoom; 1.5-inch LCD viewfinder; battery form factor: Li-ion (NP-FT1) rechargeable

Our Verdict

A cool-looking camera, very sleek, very trendy, beautifully finished. We received the chocolate-coloured version (check our September 2006 issue), and were in love with the gadget immediately. A 4-megapixel spec may seem rather light on paper, but the image quality is superb! The DSC L1 is small and wonderfully ergonomic, and thanks to the full-metal body, build quality isn't compromised one whit!

Runner-Up: Nikon Coolpix S5

Entry-Level Cameras

Nikon Coolpix L4

Specifications

3.9-megapixel CCD sensor; maximum resolution 2272 x 1704; 3x optical zoom; 2.0-inch LCD viewfinder; battery form factor: AA

Our Verdict

If it's a budget camera you want, you can't go wrong with the Nikon Coolpix L4. Sporting a 3.9-megapixel CCD sensor, the L4 gave us some good shots, both outdoors and indoors. Build quality is decent. You get an ultra-crisp 2-inch viewfinder in the bargain, which most entry-level cameras lack, and that only makes the L4 a stronger package. We guarantee satisfaction with this one!

Runner-Up: Premier DC-5370

GRAPHICS CARDS

High-End GPUs

NVIDIA GeForce 8800GTX

Specifications

G80 core; 681 million transistors; 90nm fabrication process; 128 shader units (Unified Shader Architecture); 575 MHz core speed; 1350 MHz Shader speed; 1800 MHz memory speed GDDR3; 384-bit memory architecture

Our Verdict

Although it's hardly been two months since our last graphics card test, we've seen a new performance winner emerge. NVIDIA's new DirectX 10 monster—the 8800GTX—took our labs by storm, trailblazing its way to top spot with a performance lead over previous-generation cards that we haven't seen since the debut of the GeForce 6800 series of cards.

No matter the game, no matter the application, we just couldn't get any dropped frames using the 8800GTX. Visuals were crisper than on previous-generation hardware. The 8800GTX is the ultimate weapon for the hardcore gamer and enthusiast this side of Christmas!

Runner-Up: XFX PV-T71U-ZDD9 (GeForce 7950GX2)

Mid-Range GPUs

XFX PV-T73G-UDL7

Specifications

G73 core; 12 Pixel and 5 Vertex pipelines; 90nm fabrication process; 560 MHz core; 1400 MHz memory (GDDR3); 128-bit memory architecture

Our Verdict

Virtually half a 7900GTX, the 7600GT chipset is still a lot of card for that. The XFX PV-T73G-UDL7 dominated the mid-range category like no other. Among others, this card also has a very small footprint, and runs cool. We like the trim XFX uses on the heatsink—serious visual appeal! Although NVIDIA's 8 series of graphics cards have been launched, we're still to see mid-range parts. With the competition out of the way for the moment, the G73 cores make a sweet deal for gaming on a modest pocket. XFX's version manages to leave the other 7600GTs a little way behind, while being similarly priced.

Runner-Up: Powercolor X850XT PE

Entry-Level GPUs

Gainward 6600GT 256

Specifications

8 Pixel and 4 Vertex Shader units; 110nm fabrication process; 500 MHz core; 1000 MHz memory clock speeds

Our Verdict

When it comes to an absolute shoestring budget for a graphics card, you shouldn't go for anything less than a Shader Model 3.0 card. What better card to do justice to a budget gaming rig than the fiery-red-coloured Gainward 6600GT 256 MB with Shader Model 3.0 support and enough horsepower to run most games at modest resolutions? Once a mid-range product, the 6600GT core took a price drop after the introduction on NVIDIA's 7 series. The 6600GT competes quite successfully with the newer 7300GT/GS cards, and dispatches competing products with ease! That was the case a couple of months back, and we'd still be hard pressed to suggest something better for the price. Gainward's avatar of the 6600GT is hard to beat, be it performance, pricing, or the hot looks!

Runner-Up: Zebronics PX6600GT 256MB PCI-E
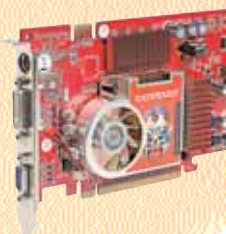
EXTERNAL HARD DRIVES

Microdrive-Based External Hard Drives

Western Digital 6GB Passport Pocket Hard Drive

Specifications
6 GB; 5400 rpm; USB 2.0; dimensions: 60 x 45 x 10 mm; weight: 278 gm

Our Verdict
The Western Digital 6GB Passport Pocket Hard Drive is 2.5-inch micro-drive-based. Aptly named Passport, this 6 GB drive isn't much larger than a Zippo lighter. Encased in a plastic casing, it is sturdy enough to withstand a fair amount of shock. The drive has a retractable USB connector that can swivel 180 degrees for easy attachment.

Based on a 5400 rpm drive, this model delivers the expected fastest performance compared to the others in its class: just 150 seconds to transfer a GB of assorted files and only 110 for a sequential transfer.

The drive comes without a CD, but WD has included the WD Sync software on the drive, which lets you easily synchronise and back up your data. You can even synchronise with Outlook.

Runner-Up: Seagate 5.0 GB Pocket Hard Drive

Portable External Hard Drives

LaCie Design by F.A. Porsche 40 GB

Specifications
40 GB; 5400 rpm; 2 MB buffer; dimensions: 129 x 76 x 17 mm; weight: 180 gm; USB 2.0

Our Verdict
The LaCie Design by F. A. Porsche was designed by the well-known design agency Porsche Design GmbH. The drive has the USB 2.0 interface, but it also has a separate power connector. This is useful when the USB port of your computer is incapable of providing adequate power to the drive. The LaCie comes with 1-Click, a backup software, and MacDrive, a software that allows you to connect and use Macintosh-formatted media directly on a PC.

This model posted the highest overall scores in SiSoft Sandra, and performed respectably well in HDTach as well. Real-world file transfer tests saw it deliver the fastest times.

With a cost per MB of just 13 paise, good build quality, cool looks, and sound performance, what more could you ask for?

Runner-Up: Transcend StoreJet 2.5 80 GB

Desktop Replacement External Hard Drives

Seagate Pushbutton Backup 160 GB

Specifications
160 GB, 7200 rpm; 8 MB buffer; dimensions: 180 x 165 x 57 mm; weight: 1.176 kg; interfaces: USB 2.0, dual FireWire

Our Verdict
Apart from the good specs, it is rugged, and has a stand so you can keep it in the upright position and save desktop space. When kept horizontally, more drives of its kind can be stacked one above the other.

The drive has a USB 2.0 port, and two FireWire ports to facilitate the connection of multiple drives in a chain to augment storage capacity.

Data backup software called Bounceback Express comes bundled, as does DiscWizard, which performs hard drive maintenance functions.

The low price of Rs 6,500, giving this drive a low cost per MB of just 4 paise, was the deciding factor in fetching it the Zero1 Award in this category.

Runner-Up: Seagate Pushbutton Backup 200 GB

INTERNAL HARD DRIVES

Serial ATA (up to 250 GB)

Samsung SP2504C

Specifications
250 GB SATA 2 (300 MBps); 8 MB I/O buffer

Our Verdict
Our benchmarks showed Samsung's SP2504C to be consistently ahead in a majority of (if not all) the benchmarks we threw its way. This is a two-platter drive with an areal density of 125 GB per platter. We've seen other drives with similar capacities sporting three platters. This is one of the reasons for the improved performance—fewer mechanical parts is always a good thing.

The SP2504C is silent, significant if you plan on stacking up more than one drive. Performance enthusiasts will benefit from two of these drives in a striped RAID array.

We haven't received too many drives based on perpendicular recording technology, so comparisons and estimates are off until market availability isn't an issue. For now, the SP2504C reigns supreme over the rest of the sub-300 GB drives available.

Runner-Up: Seagate ST3250824AS

Serial ATA (above 250 GB)

Western Digital WD4000KS

Specifications
400 GB; SATA 2 (300 MBps); 16 MB I/O buffer

Our Verdict
This drive has the show as well as the go! Purring under that matte-finished black body is a set of three platters spinning at 7200 rpm. The drive is a speedy performer, displacing even its elder brother, the WD5000KS.

The transfer rates and size of this drive make it an ideal buy for gamers, image and video editing professionals, and enthusiasts—who want speed and are not willing to sacrifice on storage capacity to get it! We've tested quite a few hard drives since August, but haven't come across anything that manages to dethrone the WD4000KS.

Runner-Up: WD5000KS

KEYBOARD / MOUSE COMBOS

Logitech MX-3200 laser

Specifications
Windows Vista ready; Internet calling buttons; 6 AA batteries; laser sensor based; soft-touch palm rest

Our Verdict
One of the first desktop combos to support Vista, the keyboard has dedicated buttons for Flip3D, a Vista feature. There is a special search button, and a touch-sensitive slider that comes in handy when using Windows Vista folders.

The keyboard sports a little LCD panel that displays the time and date as well as battery life. It also has dedicated Internet buttons for Yahoo! and AIM messengers. The usual set of programmable keys is present—programmable via the SetPoint software. The accompanying MX-600 mouse is laser sensor based, and offers great functionality in conjunction with the SetPoint software. Ergonomics is spot on.

Both the keyboard and mouse are made from a special material called AgION, which provides resistance to bacterial and fungal growth.

Runner-Up: Logitech MX-3000

MICE

Desktop Mice

Logitech MX Revolution

Specifications

Laser sensor; document flip-wheel; fly-wheel scroll; dedicated search button; Li-ion battery; battery indicator; USB receiver; desktop cradle

Our Verdict

Two years ago, Logitech redefined the mouse by launching the first laser-sight mouse, the MX-1000. With the MX Revolution, Logitech ups the ante by integrating some unique features.

First, this mouse has two scroll wheels—one placed as usual, and the other at the thumb. The regular scroll wheel offers two modes of operation: free-wheel like, and the normal line-by-line. In free-wheel mode, you can zoom through long pages. The Set-Point software is smart enough to understand when to activate free-wheel mode by judging the flick force. The second wheel acts like an [**Alt**] + [**Tab**] button. The Logitech MX Revolution is quite simply the best desktop mouse we've come across!

Runner-Up: Razer Pro V1.6

Gaming Mice

Microsoft Habu

Specifications

400 to 2000 dpi on-the-fly resolution change; 1000 MHz polling; can track true till 20G acceleration; 7080 frames per second tracking

Our Verdict

The Habu is Microsoft's vision of a gaming mouse. It blends two distinct features from two different companies: the ergonomic design is taken from the older IntelliMouse, and is mated with razor-sharp precision from Razer Inc. Going by Razer's tradition of naming its mice after species of snakes, the Habu is named after a species in Japan.

The other contenders for the title of "Best Gaming Mouse" were the Logitech G5 and the Razer Copperhead.

Microsoft ensured that the best of both worlds made it to their new gaming mouse. We found the Habu the most comfortable of all three, and the tracking was spot-on thanks to the Razer laser engine.

Runner-Up: Logitech G5

PROJECTORS

Sharp XR-10S

Specifications

0.6-inch DLP; 800 x 600 native resolution; 2000 lumens; 2000:1 contrast ratio; 40—300 image size; weight: 3.9 kg; lamp life: 2000 hours; Component video and PC inputs

Our Verdict

The Sharp XR-10S impressed us with its unsurpassed picture quality, great edge-to-edge focus, and lively colour reproduction. With a contrast ratio of 2000:1, the dynamic range is superb—black is pitch dark. Further, the higher brightness ensures the image is visible even under bright lighting conditions.

In the myriad tests we put it through, the Sharp XR-10S outperformed the competition whether it was the colour rendition test, screen uniformity test, or luminance. Frequency distortions such as moiré were next to absent.

In the movie and animation test, the video was rendered near-perfect—dark regions were rendered properly, unlike in others, where the details were lost.

Setting up the Sharp XR-10S is simple; the factory defaults themselves give good quality; however a little tuning made a huge difference.

Runner-Up: BenQ MP-610

PROCESSORS

Intel QX6700 Core 2 Extreme (Quad) Processor

Specifications
2.66 GHz; 65nm fabrication process; 8 MB cache; 1333 MHz FSB

Our Verdict
Intel's latest, the QX6700 Core 2 Extreme processor, is the world's first quad-core processor to see the light of day. This is *the fastest processor* we've come across till date. Running at 2.66 GHz, it happily fed on all our number-crunching benchmarks, and it has the potential to be utilised better when multi-threaded applications become *de rigueur*.

This processor did well in almost all the tests we put it through. In a test that supported multi-threading, the QX6700 mutilated the competition. Gaming performance wasn't the best, but that's because games will have to recoded to take advantage of multi-core.

The Intel QX6700 Core 2 Extreme is the best processor money can buy right now.

Runner-Up: Intel EX6800 Core 2 Extreme

PVR SOFTWARE

InterVideo WinDVR 3

Specifications
TV-Standards: PAL, NTSC, SECAM; video formats: MPEG-1/2, VCD, SVCD, DVD, DV, AVI; timeshift and skip; auxiliary source recording

Our Verdict
The first thing you'll note about InterVideo WinDVR 3 is its incredibly simple and easy-to-use interface. All the controls you need are on the dashboard complete with balloon help. Installing and configuring the software is a breeze, and it works with any TV-Tuner with WDM drivers. In our test scan, it detected all the available channels on our cable network.

Channel Surfing is a feature that shows a thumbnail preview of up to 16 channels at a time, and you can select the channel you wish to watch. Video Desktop is a cool feature that lets you view the video in place of your Desktop wallpaper.

The timeshift feature is simply mind-blowing, and the cool thing is that it runs well even on a moderately powerful system. Capture quality can be set in the options, and you can set it to MPEG-1, MPEG-2, or AVI, depending on how powerful your computer is. It can also automatically detect a DV-Cam connected to the PC and record content from the device. The software supports burning the captured content to CD or DVD. EPG, too, is supported, and you can use this to schedule recording of a programme. The parental control feature lets you password-protect certain channels.

It is priced a bit high, but superior features and performance tilt the balance in its favour and fetch it a Zero1 Award.

Runner-Up: NA

LAPTOPS

Just Your Regular Laptops

Compaq Presario V6102AU

Specifications

AMD Turion X2 TL-50 1.6 GHz; 1 GB RAM; 15.4-inch widescreen LCD; 100 GB HDD; DVD-RW; 802.11 a/b/g

Our Verdict

The dual-core CPU and whopping 1 GB of RAM on this laptop make for blazing-fast performance. The keypad and mouse pad are good enough to make it comfortable for extended use.

The 15.4-inch screen is bright and eminently readable; the viewing angle is 160 degrees—the highest in its category. The NVIDIA 6150 chipset churned out good graphics scores in gaming and other benchmarks. Media control buttons and a Wi-Fi switch make for easy control. The integrated memory card reader supports the most popular formats—SD, MMC, XD and MS Pro. The Compaq Presario V6102AU comes preloaded with much of the software you'd need. Considering the reasonable price tag, this laptop is very well-suited for most first-time laptop buyers.

Runner-Up: ACi Ethos Duo 1430

The Usual Suspects

Dell Inspiron 6400

Specifications

Intel Core Duo T2600 2.16 GHz; 1 GB DDR2 RAM; 15.4-inch widescreen LCD; ATI Mobility Radeon X1400 (256 MB); 80 GB HDD; DVDRW; 802.11 a/b/g

Our Verdict

Here's one true-blue performer. Despite being in the "thin and light" category, its scores equalled those of the Desktop replacements. The 15.4-inch display with a maximum resolution of 1680 x 1050 and good readability under sunlight is just wonderful; combine this with a high viewing angle to ensure less eye fatigue!

The keypad is firm, with responsive keys. The click buttons are fairly large and convenient to use. The laptop features Dell's MediaDirect buttons, which let you more easily control media playback. For casual gamers, ATI's Mobility Radeon X1400 with 256 MB of RAM won't lag while playing most new games. Battery life is decent—in excess of two and a half hours. A stable performer par excellence!

Runner-Up: HP Pavilion dv2025TU

Zen And The Art Of Bonsai

ASUS U5F

Specifications

Intel Core Duo T2500 2 GHz; 1.5 GB RAM; 12.1-inch widescreen LCD; 120 GB HDD; DVD-RW; 802.11 a/b/g

Our Verdict

Roaring under the delicate exterior, this beauty boasts of hardware that can put other laptops to shame. 1.5 GB of RAM and a 120 GB hard drive make you wonder if it's a laptop's specs you're looking at! Along with memory card reader, there's also an Express card slot, keeping your options open for any compatible upgrades. All this comes in a compact package at 1.6 kg. A good investment for those who want mobility without compromising on performance.

Runner-Up: Acer TravelMate 3012

LAPTOPS

King Of The Ring

Sony VAIO AR18GP

Specifications
Intel Core Duo T2600 2.16 GHz; 1 GB RAM, 17-inch widescreen LCD; GeForce Go 7600GT (256 MB); 160 GB HDD (RAID 0); Blu-ray writer; 802.11 a/b/g

Our Verdict
The AR18GP's 17-inch screen uses Sony's XBRITE technology to reproduce colours accurately. The display is ready to screen HD movies at 1080p HD resolution. Powering this display is the powerful NVIDIA Go 7600GT, which allows some serious gaming. Relying on two 80 GB hard drives in RAID 0 configuration, the AR18GP has twice the transfer speed compared to the other laptops in this category. This happens to be the first laptop in the world to ship with a Blu-ray writer. Battery life is two hours—good for Desktop replacements.
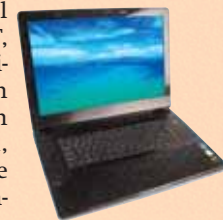
Runner-Up: ASUS F3JM

LASER PRINTERS

Monochrome Laser Printers

Brother HL-5170DN

Specifications
2400 x 600 dpi; 32 MB memory; 250-sheet input tray capacity; 300-sheet additional paper tray; toner duty cycle 3500 pages; network port; USB 2.0 and parallel interfaces

Our Verdict
Here's a feature-rich printer that offers a range of options. First there's the extra input tray. Then, the HL-5170DN has the necessary Ethernet port to support network printing. The 32 MB of memory can be upgraded to 160 MB. Build quality is good. It has the best printing quality in its category, and offers dual-side printing to minimise human intervention. Both Windows and Mac are supported. After-sales support is very good, backed by a three-year on-site warranty, and there are 105 service centres across India.

The HL-5170DN is a bit expensive compared to the other printers in its category, but features and print quality more than make up for the premium you'll pay.

Runner-Up: Samsung ML-2010

Colour Laser Printers

Epson AcuLaser-C1100

Specifications
600 x 600 dpi; 32 MB memory; 180 sheet input tray capacity; 500-sheet additional paper tray; dual-sided printing; Windows and Mac ready; network port; USB 2.0 and parallel interfaces

Our Verdict
Still going strong is the Epson AcuLaser-C1100 with its rugged looks. An LCD screen gives you the status of an ongoing task. It was the fastest of the lot, with also the best printing quality, leaving the competition behind in all our tests; and compared to the competition, the price is very reasonable. Toner duty cycle stands at respectable 4,000 pages. Add to that its network capability, and you have the ideal solution for the printing needs of any medium-sized organisation. And if that's not incentive enough, let us remind you of that Epson has a network of 211 service centres across the country to honour your one-year warranty. The 2006 Zero1 Award for colour laser printers goes to the Epson AcuLaser-C1100—just as it did last year!

Runner-Up: NA

LCD MONITORS

17-Inch LCD Monitors

Samsung 740N

Specifications

Viewable area: 17 inches; resolution: 1280 x 1024, aspect ratio: normal; pixel pitch: 0.264 mm; brightness: 300 cd/m2; contrast ratio: 600:1; interface: D-Sub; dimensions: 36.6 x 39.1 x 20 cm; power consumption: 34 W

Our Verdict

The Samsung 740N's response time of just 8 ms means it is good for gaming and movies. It can be adjusted vertically, and the VESA mounting option lets you hang it on a wall. Brightness and contrast ratio are good, the colours are vivid, the image is crisp, the viewing angle is wide. A power consumption of 34 W means considerable power savings.

Runner-Up: NU QL-711V

19-Inch LCD Monitors

NU L921G

Specifications

Viewable area: 19 inches; resolution: 1280 x 1024, aspect ratio: normal; pixel pitch: 0.294 mm, brightness: 320 cd/m2; contrast Ratio: 600:1; interface: D-Sub/DVI-D; dimensions: 44.8 x 44.7 x 19.3 cm; power consumption: 50 W

Our Verdict

"Good things come at a price." Not so in the case of the NU L921G. This 19-inch LCD is sturdy and weigh just 5.3 kg, less than most others in its category. It also has the smallest dimensions and footprint. It can be swivelled vertically but not horizontally. It has inbuilt speakers, just in case. D-Sub as well as DVI-D connectors are provided for digital video signal transmission.

The brightness and the contrast ratio make viewing on this monitor a delight. A low response time of 8 ms and large viewing angles make it suitable for gaming as well as movies. Power consumption is 50 W, which again is quite low. In the end, it was the price tag that was the deciding factor in the NU L921G winning the Zero1 Award for 19-inch LCD monitors this year.

Runner-Up: Asus PW191

LINUX DISTRIBUTIONS

SuSE Linux 10.1

Our Verdict

If there is one Linux distro we'd bet our money on, it would be SuSE! With Novell's takeover of SuSE, things have simply moved several notches up.

With SuSE Linux 10.1, Novell has set a new benchmark in terms of look and feel. The interface is simply fantastic—well-thought-out grouping of menus, easy access to regularly-used applications, and an eye-pleasing Desktop.

YAST (Yet Another Setup Tool) makes installing SuSE Linux a painless affair; even disk partitioning, custom installation, etc. can be easily done by a novice. Hardware detection is on the better side, but could have been better.

The Beagle search engine makes searching for file a breeze, and YAST ensures application installation is easy. Automatic updates keep the system up to date with minimal user intervention. XGL X Server gives SuSE a user interface that has serious potential to rival the upcoming Vista and Apple's Mac OS X.

These features apart, what makes SuSE our choice for the best Linux distro is the ecosystem that Novell has built around it. Whether you need it for Desktop or server or both, Novell has products that integrate well to offer a complete solution.

Runner-Up: Ubuntu Linux

INKJET MFDS

Home Inkjet MFDs

HP Officejet 4355 All-in-One

Specifications
1200 x 1200 dpi optical resolution; sheet-fed scanner; 100-sheet input tray; dialpad; handset

Our Verdict
The Officejet 4355 is a true MFD, with printer, scanner, copier, and handset rolled into one. The interface is easy and intuitive. A small monochrome LCD display on the front keeps you updated about the assigned task and its status. Though not the fastest printer in its category, it more than makes up with very good print quality—in fact, the best print quality in its category. With its photo-printing ability, it gives more expensive printers a run for their money. Colour reproduction is far more accurate than that seen in the competition. Copying quality is more of the same story. You can reduce the size of copies to 25 per cent or enlarge it up to 400 per cent. Combining its good performance with its price and the support provided by HP, this do-it-all easily qualifies for the Zero1 Award.

Runner-Up: Brother MFC-3240C

Office Inkjet MFDs

HP Officejet 5610 All-in-One

Specifications
1200 x 2400 dpi optical resolution; flatbed and sheet-fed scanner; 100-sheet input tray; automatic document feeder; dialpad; USB 2.0 interface

Our Verdict
The HP Officejet 5610 All-in-One can scan A4-size media at a resolution of 1200 x 2400 dpi. It has the best print quality in its category. Along with regular documents, it is at home printing photographs as well. It gave us the best-quality photo prints at a relatively faster speed. Copy quality is average, and it allows you to reduce or enlarge copies from 25 per cent to 400 per cent. This MFD is bit expensive for its category, but it's worth the money.

Runner-Up: Brother MFC-3240C

Professional Inkjet MFDs

Brother MFC-5840CN

Specifications
1200 x 2400 dpi optical resolution; flatbed and sheet-fed scanner; 350-sheet input tray; automatic document feeder; dialpad, multi-card reader; Ethernet port; USB 2.0 interface

Our Verdict
This is one cool performer for a professional environment. With its decent printing speed and print quality, it can take on fairly heavy workloads. Unique among its peers is the 350-sheet input tray. With a monthly duty cycle of 3,000 pages, it is an ideal choice for professionals. Thanks to the standard Ethernet port, you can deploy it over a network. The card reader allows you to print directly from memory cards without having to use your computer. The dialpad and dedicated fax button are very convenient. The MFC-5840CN is also priced competitively in its category—an ideal Zero1 Award winner!

Runner-Up: Brother MFC-410CN

LASER MFDS

Monochrome Laser MFDs

Samsung SCX-4521F

Specifications
600 x 600 dpi optical resolution; flatbed and sheet-fed scanner; 150-sheet input tray; 2 MB memory; Ethernet port; USB 2.0 and parallel interfaces

Our Verdict
The Samsung SCX-4521F is Windows Imaging Architecture compliant—in English, this means you just connect it to a PC with Windows XP and it will be recognised; no need to install any drivers. OS support spans across Windows, Mac, and Linux. Print quality is crisp, and the printer is relatively fast. It has the fastest scanner in its category with accurate scanning results. It continues its good run in the copying test as well, returning the lowest copying times and best quality. There are multiple modes of copying—ID card copy and poster copy. With an integrated Ethernet port and a toner duty cycle of 3,000 pages, the SCX-4521F is a good buy for SoHo users. It is not only a feature-rich performer, it comes with a good software bundle, increasing its value for money.
Runner-Up: Xerox WorkCentre PE220

INTEL MOTHERBOARDS

Intel 945G Express and 945GZ Express (Low-End)

ASRock Conroe 945G-DVI

Specifications
Support for LGA 775 CPU up to Core 2 Duo Extreme; onboard Intel graphics; 8-channel audio; maximum 4 GB DDR2 RAM; four SATA ports; Gigabit LAN; up to eight USB 2.0 ports

Our Verdict
The ASRock Conroe 945G-DVI is based on Intel's 945G chipset. Though designed for older Pentium D CPUs, with BIOS revision, this motherboard supports the latest Core 2 Duo CPUs. It offers both onboard video and a PCIe slot. Though falling in the low-end category, the Conroe 945G-DVI scored quite close the newer, 965G-based motherboards that cost almost thrice as much! This board is very well-suited for most common applications like surfing, office suites, entertainment, and moderate gaming. The Conroe 945G-DVI motherboard gives truly amazing performance at a very low cost.
Runner-Up: Gigabyte GA-945GM-S2

Intel P965 Express and G965 Express (Mainstream)

Gigabyte GA-965P-DQ6

Specifications
Support for LGA 775 CPU up to Core 2 Quad; 8-channel HD audio; maximum 8 GB DDR2 RAM; CrossFire support; eight SATA ports; e-SATA support; SATA RAID support; Gigabit LAN; up to 10 USB 2.0 ports

Our Verdict
Based on Intel's latest P965 Express chipset, the Gigabyte's GA-965P-DQ6 offers support for Intel's latest Core 2 Quad CPUs. This board boasts of good gaming performance, thanks to CrossFire support. Eight SATA ports ensure you never run out of ports to connect your hard drives. SATA RAID support lets you configure your hard drives to RAID 0, 1, 5, or 10. A passive heatsink covering the Northbridge and the Southbridge increases cooling efficiency. The use of solid-state capacitors also increases the life of the motherboard. The scores this board clocked clearly indicate that it is an ideal choice for those who intend to use their PC for gaming, 3D designing, or audio/video editing. Though a bit more expensive than the competition, strong performance and features bring in the Zero1 Award for the GA-965P-DQ6.
Runner-Up: MSI P965 Platinum

Intel 975X Express and nForce4 SLI (Performance)

Foxconn 975X7AB-8EKRS2H

Specifications

Support for LGA 775 CPU up to Core 2 Duo; 8-channel HD audio; maximum 8 GB DDR2 RAM; CrossFire support, five SATA ports; e-SATA support; SATA RAID support; Dual Gigabit LAN; up to eight USB 2.0 ports

Our Verdict

Unlike some 975X boards, this board supports a maximum DDR2 frequency of 800 MHz. The area around the CPU socket is not cluttered, permitting easy installation of a larger heatsink. The two PCIe slots are CrossFire compatible, and apart from the normal SATA connectors, there is an e-SATA connector at the back. Dual Gigabit LAN makes this board ideal for gamers. For the overclocking fraternity, there is a dedicated entry in the BIOS—Fox Central Control Unit—that lets you do your thing. The cool combination of features, performance and price make this board a Zero1 Award winner.

Runner-Up: Intel D 975XBX

AMD MOTHERBOARDS

Socket 939 Motherboards

ASUS A8R MVP

Specifications

ATI Xpress 1600 chipset based; 2000 MHz HT bus (FSB); CrossFire ready; four DIMMs support 4 GB of DDR 400 MHz RAM; 6-channel HD compliant audio

Our Verdict

Although not future-proof, lets face it... Socket 939 motherboards are still hot due to their reduced prices and the fact that AMD 939 dual-core processors are dirt-cheap! The ASUS A8R MVP is the best board around for 939 processors, single or dual core. Good layout, great feature set, and sterling performance and stability, coupled with the fact that you get a multi-GPU-ready platform make the A8R MVP a good buy if you're on a budget, and still want good performance from your Desktop. Though the newer platforms have overshadowed Socket 939, if you need the best motherboard from that AMD 64 processor, you can't goof up here.

Runner-Up: ASUS A8R 32 MVP Deluxe

AM2 Motherboards

ASUS Crosshair

Specifications

nForce 590SLI chipset based; 2000 MHz HT Bus (FSB); SLI-ready; four DIMMs support 8 GB of DDR2 800 MHz RAM; 8-channel HD compliant audio

Our Verdict

ASUS designed the Crosshair from the PCB layer up to be a hardcore enthusiast solution. This is the best looking board we've laid our hands on for the AM2 platform. It also wins on the layout front, with the attractive heatpipe cooling solution adding visual appeal. Lacking any sort of onboard cooling fans, the Crosshair is able to provide a quiet computing experience without compromising on stability. An eight-phase power design and lots of over-volting options in the BIOS will keep most enthusiasts happy, while SLI support will keep gamers interested as well.

Performance is excellence itself. The Crosshair is also an outstanding combination of looks, features, and a rich bundle. It's pricey, but so are Ferraris!

Runner-Up: MSI K9N SLI Platinum
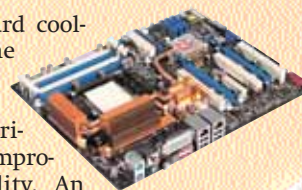
MP3 PLAYERS

Flash-Based MP3 Players

iPod nano 8GB

Specifications

8 GB; second-generation, size: L x W x D = 3.5 x 1.6 x 0.3 inches; music formats supported: AAC, MP3, WAV, AIFF, Audible, Apple Lossless; Li-ion battery life: 16 hours

Our Verdict

The only second-generation nano available in pure, sinful black, the 8 GB iPod Nano now gets a scratch-resistant aluminium body while retaining that slim, sexy-as-hell look we've come to appreciate Apple's players for. It has a much brighter display (the same 1.5 inch) as its predecessor: up to 40 per cent brighter. The new iPod is available in sizes of 2, 4, and 8 GB, and also gives up the curvy edges for a sharper look.

What remains unchanged is the excellent music quality. The thumbnail preview feature for viewing photos is neat. The only sore note with the 8 GB iPod Nano is the lack of video playback support, which some of the competitors provide. We're forgiving its inadequacies, though, for its great music performance and those hot looks!

Runner-Up: SanDisk Sansa e260

Hard Drive Based MP3 Players

iPod 80 GB

Specifications

80 GB; fifth-generation, size: L x W x D = 4.1 x 2.4 x 0.3 inches; audio standards supported: MP3, AAC, WAV, AIFF, Apple Lossless; Li-ion battery life: 20 hours under normal music playback

Our Verdict

Looks-wise, there are very subtle differences between the earlier iPods and this one. What has improved immensely is battery life during video playback. Apple's also provided a much brighter screen, and provided a couple of desirable features such as gapless playback (between song tracks) and an instant search function.

Music playback, any portable player's bread and butter, are absolutely delicious on the iPod. The bundled earbuds could have been better, but they're comfortable thanks to silicone rims. It's a pity the body's still a scratch magnet, but once you plug it in, you'll forgive these little shortcomings.

Runner-Up: iPod 30 GB

OPTICAL DRIVES

Internal Optical Drives

Sony DRU-830A

Specifications

Write: DVD-R / +R: 18x; DVD+RW / +R DL / -R DL: 8x; DVD-RW: 6x; DVD-RAM: 12x; CD-R: 48x; CD-RW: 32x
Read: DVD-ROM: 16x; CD-ROM: 48x
USB 2.0; i.LINK FireWire; dimensions: 14.61 x 4.14 x 17.78 cm; weight: 0.91 kg

Our Verdict

The DRU-830A is capable of burning DVD+R and -R at breakneck speeds of 18x, the fastest around. It can even write at 18x to 16x media! Dual-layer media can be burnt at 8x, which means you can burn a complete dual-layer media in under 15 minutes.

Nero will take care of your burning, and the bundling of a black bezel means you can match the colour of your cabinet.

It has a 2 MB buffer and Ultra DMA33 interface and is cheaper than its competitors. It's the natural choice for the Zero1 Award for internal DVD-Writers.

Runner-Up: NA

External Optical Drives

Sony DRX-830UL-T

Specifications
Write: DVD-R / +R: 18x; DVD+RW / +R DL / -R DL: 8x; DVD-RW: 6x; DVD-RAM: 12x; CD-R: 48x; CD-RW: 32x
Read: DVD-ROM: 16x; CD-ROM: 48x
USB 2.0; i.LINK FireWire; dimensions: 5.08 x 16.51 x 24.89 cm; weight: 1.59 kg

Our Verdict
This drive performed toe-to-toe with its *internal* counterpart, when writing a DVD-R or a DVD+R or even a CD-R. It supports hi-speed USB 2.0 as well as FireWire.

Sony provides a manual and a quick setup guide on CD. It comes with Nero and Roxio Toast 6 Lite DVD/CD.

A stand is provided so the drive can be placed in an upright position, thus saving valuable desktop space. Sony also provides USB and i.LINK FireWire cables, so no additional expenses for you.

With the lowest price in its category as well as the best performance and features, we have no reservations in awarding the Sony DRX-830UL-T the Zero1 Award for this category!
Runner-Up: NA

SPEAKERS

2.1 Speaker Sets

Altec Lansing MX5021

Specifications
90 W RMS total power (50 W subwoofer, 20 x 2 W satellites); subwoofer 6.5-inch driver; satellites: 2 x 3-inch mid-range drivers and 1 x 1-inch horn-loaded tweeter; wired control pod with volume, treble, and bass settings; fully-functional IR remote

Our Verdict
The MX5021 is one of the only speaker sets we've seen that faithfully reproduces sound as neutrally as possible throughout the audible spectrum. The bass that its 50-watt subwoofer belts out is deep and resonating, yet very defined. The mid-range is excellent, and the horn-mounted tweeter gives sharp, piercing highs.

The wired control pod and IR remote add convenience to an already strong package. Some might think these speakers a tad pricey, especially when compared to many of the el cheapo 5.1s out there... but we urge you to trust us and pick one of these sets up if you like to pamper your ears! Acoustic indulgence can't get much better!

Runner-Up: Altec Lansing FX6021

5.1 Speakers Sets

Philips MMS 5.500 i/C

Specifications
Total power 75 W RMS (subwoofer 25 W RMS, satellites: 4 x 10 W + centre speaker 10W); remote control

Our Verdict
A 5.1 that can excel at a surround sound experience and please the listener with stereo performance is rare indeed. So many speakers these days promise much to one particular audience group and fail to deliver to others. This set will easily satisfy the music lover with sterling performance when playing audio CDs and MP3s. What was most noticeable was the quality of the highs: typically, 5.1 sets are more geared towards movies (and therefore bass with some mid-range).

Build quality has always been an issue with most 5.1s. Since they don't always sit on your desktop, sturdiness of build is something we always look at. Another top spot for these speakers—they're built like little tanks! The subwoofer isn't too large to spoil aesthetic appeal, yet belts out enough bass to assure you of its presence... emphatically!
Runner-Up: Philips HTR 5000

CD/DVD BURNING SOFTWARE

Nero 7 Premium

Specifications

Burning features: DVD: ISO, Copy, Bootable, Video, USF, UDF/ISO; CD: ISO, Audio, Mixed, CD-Extra, Copy, VCD, SVCD, miniDVD, Bootable, UDF, UDF/ISO, Audiobook

Our Verdict

Nero in its latest incarnation—7 Premium—packs in much more than a burning software. Each module is a full-fledged program that runs independently and makes Nero more than a jack-of-all-trades!

Nero Burning ROM supports a wide range of disc formats—both CD and DVD. It comes ready with support for newer standards such as Blu-ray. It can even burn LightScribe labels on supported drives.

Overburning is well-supported, and it also lets you set the Book-Type for maximum com-patibility. There are also certain extras such as a music file encoder and ripper. BackItUp allows you to back up your files and folders—or even an entire hard disk.

Nero Vision is a full-fledged video capture solution that lets you transfer your "digital memories" to optical media. Be your own DJ with SoundTrax and edit tracks using WaveEditor. Use Recode to master your own DVD. Watch movies using the ShowTime player... the options are endless!

To sum it up, Nero 7 Premium is more than a burning software, it is a complete multimedia entertainment suite—and a well-deserving winner of a Zero1 Award.

Runner-Up: Sonic/Roxio Easy Media Creator 8

PC WEB CAMERAS

Tech-Com SSD-641-MP

Specifications

CMOS sensor; video: 640 x 480 @ 30 fps; still: 640 x 480; inbuilt microphone; USB 2.0

Our Verdict

This cam looks decent enough, and has a protective visor for the lens when not in use. The inbuilt microphone is convenient. Focus can be adjusted by manually rotating the lens. The camera can be rotated in any direction using the horizontal and vertical swivel. Quick snaps can be clicked using the provided button.

The camera captures video with good colour, brightness, contrast, and sharpness, producing overall good results in fluorescent as well as daylight lighting conditions. Image quality is not the best, but it's still respectably good, and the Tech-com SSD-641-MP can manage to give the more expensive webcams a run for their money.
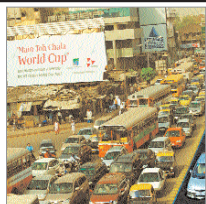
A ridiculously inexpensive model, priced at just Rs 549, and with above-average performance results, this one has to be the winner of the Zero1 Award for PC Web Cameras.

Runner-Up: Microsoft LifeCam VX-6000

Lead Feature

You're Being Watched

Whether it's in your office, a changing room, on vacation, at a friend's place...technology has enabled spying on you. Will you ever be safe?

Robert Sovereign-Smith

A Google search for "MMS Scandals" brings up over 3 lakh results, but what's worrying is the fact that the first few results scream "DPS MMS, Preity Zinta, Mallika Sherawat, Nude Riya Sen Pictures...", or something to that effect. We Indians seem to have turned voyeur, and the sheer number of video clips of unsuspecting women or couples caught on camera in the most compromising of situations is testimony to that.

Web sites proudly proclaim "Desi" content, with the most popular sites offering voyeur videos of everyday Indian women. Not all these videos or pictures contain nudity, but they certainly are all sexual in nature. Popular forums and blogs, visited by a lot of Net-savvy young Indian men and women, contain content that is filmed without the subjects' permission.

Take the example of a forum that has mainly Indian members who share pictures and video clips that they've shot / found of Indian men / women (you really thought we'd link you to it, didn't you?). Though the site has loads of pornography and MMSes, surprisingly, the most popular threads are those that are filled with "aunties" (forum slang for women between the ages of 25 and dead) in regular clothes, just going about everyday work, such as hanging up clothes, or sweeping their balconies! No nudity is required, just a little skin showing! Amateur photographers-turned-voyeurs click these pictures and post them online, where members come and make derogatory and sexual remarks about them. If you think this is limited to a few big cities, you should know that this writer has seen pictures posted by people from Nasik, Baroda, Mumbai, Pune, Bangalore, Kolkatta, Delhi, Lucknow, Kanpur, Imphal, Udaipur, Ranchi, Gwalior... a never-ending list!

Omnipresence

Technology has invaded our lives, and though most of it is good, there are negative aspects to everything. Take the mobile phone, for instance: what was an elitist device a decade ago is now a tool for the masses. But what's causing the problems is the falling prices of camera phones. With higher-end phones now sporting in excess of 3-megapixel cameras, the older VGA models have become bare minimum for anyone buying a mobile today. It's not even a feature anymore; it's just there!

While a lot of us will use this technology to click pictures of our families, pets, or nature, others will try and misuse it for voyeuristic purposes. Arming everyone from teenagers to adults with an easily concealable camera will obviously have repercussions.

A chat with one of the people (anonymity requested) who posts such pictures on forums and sites explained a lot:
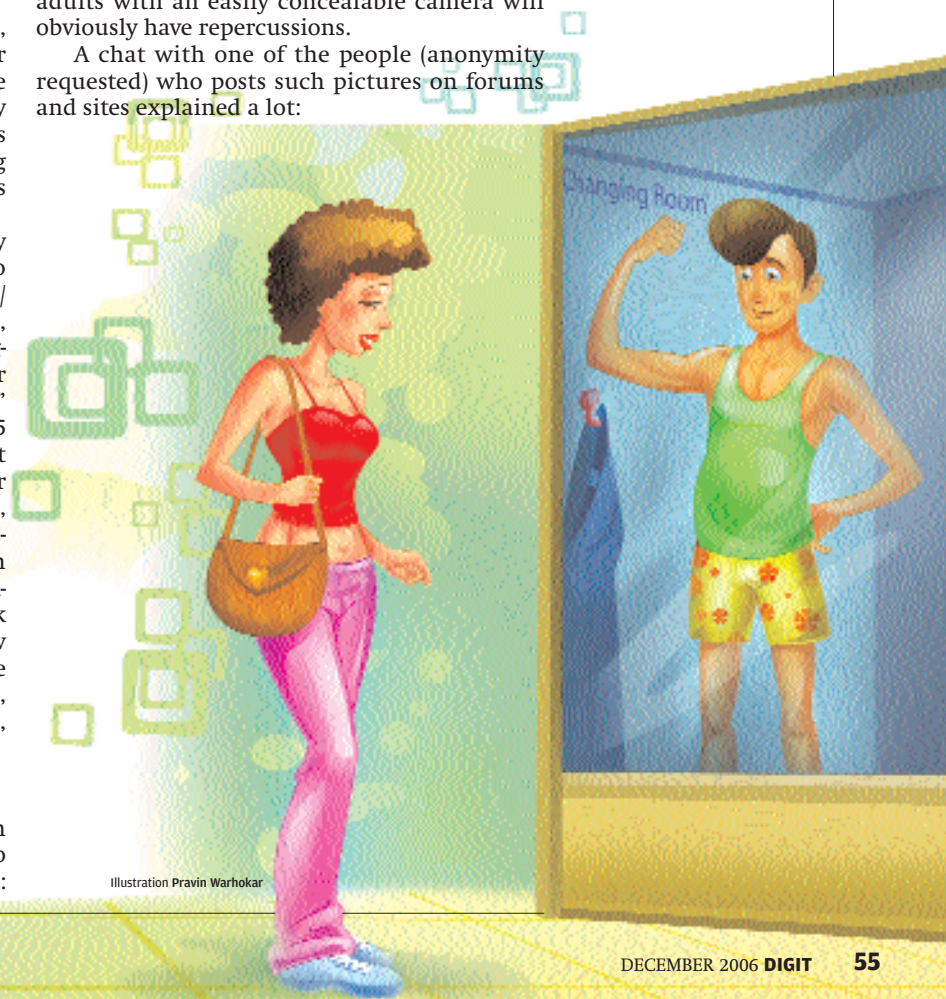

Illustration **Pravin Warhokar**

Q. Why do you post pictures online?
A. Honestly, I just like the attention and praise for it. I like to share my voyeuristic exploits with friends.

Q. Why pictures of women shopping, hanging clothes, standing at a bus stop? These are just regular women!
A. Have you watched TV recently? All the most popular shows are based in reality. We want to see real women, in everyday scenarios, and admire them. Pornography is so fake and so passé that most people now prefer to see regular women in revealing street clothes, rather than pornstars in action!

Q. But without their permission? Most of the responses are hardly anything that women will find flattering…
A. I can't help how people express themselves. I see beauty in real women, and I take pictures of them to remember it. If someone else cannot control his vocabulary, that's his problem. At least I have the courtesy to blur out faces most of the time, to prevent these women from being recognised. Most others don't.

What's sad is that he's right! Most of the other people posting pictures didn't blur out the faces of the women they'd secretly photographed. In three days of

Genius has a Web camera that looks like a stuffed toy—can be used as a concealed camera?

research, this writer saw over 2,000 pictures of women from around India, posted on forums or blogs that deal with voyeurism—and in addition, at least 500 video clips that could be classified as adult material, all of them involving real people being filmed without their knowledge. The settings were as varied as bathrooms / public toilets, hotel rooms, and even those shot at home, with or without the subject's consent.

▽ Situations To Avoid

▣ When holidaying with your family, make sure you stay at a trusted hotel. Smaller guesthouses and rooms on rent might compromise your privacy. This doesn't mean that all smaller establishments are unsafe, or that all large hotels are safe—it's just the law of averages!
▣ Avoid shooting yourself or your family in compromising situations. Most of the voyeur content online is "leaked" content that was shot with the knowledge of the subjects! Want to make that honeymoon special? Try a candlelight dinner instead of making an A-rated home movie!
▣ Don't store sensitive content (of yourselves, your family, or your friends) on your PC or mobile phone. Your PC might be used by your friends who could stumble across this content, and your mobile phone could be stolen.
▣ Cyber cafés are another problem. If you're storing personal and/or explicit content in your e-mail account, accessing that account from a public place such as a cyber café is a bad idea. If someone has installed a keylogger on that machine, they can get access to your e-mail account, and as a result, all your personal data. Blocking your credit card is easy, but living with the embarrassment of being caught with your pants down is not.

Reality Means You

It's true. Whether you consider voyeurs sexual predators or just irritants, the reality is that they're just waiting for a chance to catch you in a compromised situation. By reading what voyeurs say online, it's obvious that there is no stereotype: it's easy to tell that some of them are just teenagers with overcharged hormones (generally using IM-speak in posts), while others seem to be very well-educated adults, fluent in language and technology. So what this means is that your friend, neighbour, boss, employee, beautician, servant, etc., could be voyeurs, and you'd never know.

With millions of women being exploited by voyeurs worldwide, how do you stop this happening to your friends or family members?

Should we stop going outside our houses? Make sure we dress (and do everything else as well) in the dark? We know we cannot. So how do we prevent being exploited like this?

The easiest way to prevent being embarrassed is by understanding how voyeurs work, and what they use to spy on you.

The Tools Of The Trade

Most of the tools used by voyeurs are video capture devices. From regular webcams to miniature spy cameras, it's all available online and at select stores in your city.

Our first stop had to be ebay.in. Here we found quite a few "spy" cameras on sale for less than Rs 800! Obviously not any great quality, but probably good enough to get a grainy picture—though *any* sort of picture is bad enough for a victim. For the voyeur with the desire to film in complete darkness, there are products such as the "Night vision wireless colour security camera (2.4 GHz)". Because it's wireless, this camera can be set up anywhere, while the voyeur sits nearby (up to 1,000 feet away) and enjoys the show. It's also easy to record the video and audio stream.

Ironically, most of the devices that are a potential threat to your privacy are sold as security devices! Take the pin-hole cameras that are widely available. Unlike other cameras, which are quite easy to spot, pin-hole cameras are very hard to detect, as they literally need just a pin hole to look through. You get wireless versions that can be hidden inside anything, like teddy bears, small boxes, behind / inside walls, false ceilings, etc. You also get pen cameras, which are hidden in plain sight. Then there are the alarm clock cameras and the smoke detector cameras, which are very obviously made for spying purposes.

None of them are overly expensive, either, ranging in price from Rs 1,000 to Rs 40,000. Obviously, the more expensive spy cameras offer better resolutions, with lower lighting requirements—and are more concealable. Audio is another addition to the more expensive models.

Of course, sometimes the actual technology isn't anything special, like when installing a camera behind a one-way mirror! You could even install a bulky movie camera or camcorder behind a one-way mirror—if there's space available. There are various ways to check for one-way mirrors—shutting off all the lights and

pressing a flashlight to the mirror will let you see if it's one-way and if there's a space behind it. Another easy way to check is to try moving the mirror: if it moves, look behind it, if it's built into the wall, try and find out what's behind it by looking at the layout of the room and the surroundings.
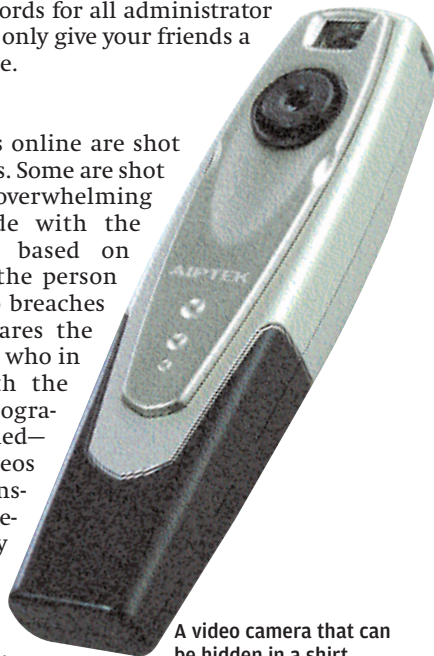
The PC

If you think the only way you can be caught with your pants around your ankles is by video or audio devices, think again. Most of the privacy breaches that happen around the world are through PCs. Whether it's gaining access to your bank account passwords, your credit card information, or just your e-mail, it all happens through the PC. The most common places where these breaches in your privacy occur are at cyber cafés and at work! Yes, you read that right—at work!

The people accessing your personal information are not always hackers—these could be your friends, you co-workers, your boss, even your system administrator. Most companies reserve the right to scan through your work e-mails, and it's not against the law. When you use company property, the company has the right to monitor *how* you use that property.

Keyloggers are the biggest threat to your privacy, at home or work. They could be installed by your friends or co-workers, and could give everyone access to your personal life. Most commercial keylogging software is undetectable by anti-virus scanners, and don't even show up in the Task Manager. The safest thing you can do is leave all your personal work for home, on the computer you own and trust. Also, if your home computer is used by friends, make sure you put passwords for all administrator level accounts, and only give your friends a guest account to use.

The Cell Phone

Most voyeur videos online are shot with mobile phones. Some are shot in secret, but the overwhelming majority are made with the victim's consent, based on trust. Sometimes the person shooting the video breaches that trust and shares the video with friends, who in turn share it with the world, or the videographer is himself fooled— and shares the videos unknowingly: transferred over Bluetooth, by exchanging memory cards, or just because of the phone being stolen. If you're smart, and would rather not become the object of every porn-surfing Netizen's fantasy, don't allow yourself to be filmed in compromising positions, no matter how much you trust the person behind the camera!

The Visortech Spy Cam is a wireless pin hole camera— the most dangerous type of spy equipment

Stay Safe

If you educate yourself about the technologies available that aid in spying, it will be that much harder to fool you. You also need to inform your families and friends about such threats, and report every such incident to the authorities. If you have friends or family members who take pleasure in being voyeuristic, remind them that what they are doing is illegal and punishable by law. It's also good to put people in the victim's shoes: the line "What if someone did this to your mother/sister/daughter?" seems to put things in the right perspective, and generally acts as a deterrent—not always, but often enough!

Meanwhile, just stay safe and play sensible! ∎

robert_smith@thinkdigit.com

A video camera that can be hidden in a shirt pocket as a pen

Will Wii Rock You?

Nintendo, the ageing rock star, pops some pills, cuts its hair, and jumps on-stage singing a new tune and raring to go. Will the Wii herald a powerful comeback or be the swan's last song?

Ahmed Shaikh

Nintendo's history is a colourful one. The company started life in 1889 as a maker of Japanese playing cards. It then reinvented itself to become a toy company in the 1960s, and moved on to video games only in the 1970s. During this transition, the company cast itself as a love hotel and even as a taxi company!

Down the decades since its birth, Nintendo has seen both the zenith and the nadir of success. Many credit the company from single-

Imaging **Pradip Ingale**

handedly reviving the industry post the 1983 video game crash. While the company enjoyed great success with its NES home console system, it hasn't achieved that level of success since. Indeed, Sony usurped the home console crown with its release of the first PlayStation, and hasn't looked back since. Today, Nintendo enjoys a dominant position on the handheld console front, but has seen its home console share erode and its position slip to number three.

Its last console, the GameCube, has been declared to "not meet expectations", by the company itself—a euphemism for failure if ever

there was one. Nintendo thus enters the new console generation sore and defeated -squeezed on both the home console and handheld fronts by industry giants Sony and Microsoft, and their deep dollar pockets.

Thus cornered, 2004 surprisingly witnessed a resurgent Nintendo. One not afraid to throw the dice and take its chances; beaten perhaps, but daring to go; and singing a new tune. Today, Nintendo is betting on a revolution. With its mantra of "all-access gaming," it wants to change the way the world plays and views games. Under the leadership of once game designer and current president and CEO Satoru Iwata, Nintendo would like to exorcise the "unsocial" tag associated with playing games—and simultaneously regain its long-lost crown.

Rising To Heaven

When Nintendo introduced the DS handheld in late 2004, nobody expected the ugly, fat handheld with two screens to stand a chance against Sony's sleeker, sexier, and much more powerful and capable PlayStation Portable. Nintendo's retired President Hiroshi Yamauchi was quoted by the Japanese *Nikkei Shimbun* newspaper as

saying, "…if the DS succeeds, we will rise to heaven, but if it fails we will sink to hell."

In many ways, the DS was Nintendo shaking the boat just to see what sticks and what sinks. As far as the company was concerned, these were the worst of times: the Japanese gaming market was shrinking, or stagnant at best. The gaming population was seeing little growth; gamers were dropping out to real-life and questing to more the mundane things: job, wife, loans, kids. Female gamers were as rare as ever, as were gamers above the age of 40. In this environment, competing against Microsoft and Sony was a losing gambit. Nintendo thus decided that their best bet would be to expand the market and dip its toes in the virgin waters thus created. Lapsed gamers, women, and the aging populace would thus be targeted, along with the usual army of Nintendo fans.

Thus was the DS born: with a touch screen to simplify controls. At one point, Nintendo entertained the thought of doing away with all buttons save for the touch screen. Similarly the DS' microphone and wireless networking features were meant to increase interaction with a game and simplify the multiplayer experience. But designing the hardware was half the battle. With games such as *Nintendogs* (wooing the female population with cute puppies), *Brain Training* (luring an ageing Japan to keep their brains sharpened), *Brain Age*, and *New Super Mario Bros.* (capturing the thus newly-created market and the lapsed gamer with the simple and familiar world of Mario), Nintendo successfully expanded the gaming market.

The strategy was a huge success. The DS/DS Lite is the fastest selling console in Japan and has sold over 25 million units worldwide in less than two years. The company now hopes to emulate its success in the home console market with the Nintendo Wii.

Worst. Name. Ever?

When Nintendo named its next-generation console the "Wii", you could hear the Internet collectively snigger and groan. Pronounced "we", the name was a joke in itself. But Nintendo's

When Nintendo named its next-generation console the "Wii", you could hear the Internet collectively snigger and groan

nomenclature followed its new philosophy of all-access gaming. Wii (we) was for everyone—you, your sister, your mom, your granddad, and so on. On a quiet day, you can still hear the giggles, but Nintendo might yet have the last laugh.

The Nintendo Wii is a system like no other. Iwata had a vision for what Nintendo terms its "new-generation" console: it should be small, quiet, cool (thermally), approachable (don't scare the moms away), and sexy. It should be easy to play on the Wii (snigger), the controller must not be a mess of buttons, the Wii should be always on and rearing to go (groan).

With these broad directions, Nintendo's engineers designed what is perhaps the most unique gaming device to grace Mario's Green Earth.

Waggle time

The most striking feature of the Wii is doubtless its controller. Dubbed the Wii Remote and rechristened "Wiimote" by the Internet, the controller resembles a simplified TV remote—something everyone is familiar and comfortable with. The Wiimote can be waved as a sword, or swung as a bat or golf club; it can be cast as a fishing reel, or used as a steering wheel.

The Wiimote gets its mojo from motion tracking: it can detect its own position and orientation via a conjunction of accelerometers and an infrared sensor. The accelerometers determine roll, pitch, yaw, and directional movements. These are then communicated to the console via Bluetooth. The Wiimote can also track its own position relative to the console: this is done via a thin, small sensor bar that can either sit above or below a TV set—the bar houses infrared lights that are tracked by a camera embedded in the Wiimote, much like an actual TV remote's IR window. The Wiimote is thus able to act as a pointer on the TV screen, analogous to how a PC mouse works: small movements on the mouse pad are converted to mouse movements onscreen.

A game made for the Wii may or may not make use of this pointer functionality—action FPS *Red Steel* does, while racing game *Excite Truck* doesn't.

When the Wiimote was designed, Shigeru

▼ The Games

Red Steel
The game employs the Wiimote as a gun and the Nunchuk to lob grenades and take cover. Shaking the Nunchuk reloads a weapon, pushing the Wiimote forward can topple furniture which can be used as cover. The Wiimote also acts as a sword, controlling a Katana, while the Nunchuk is used to block the enemy's sword attacks. The game offers split-screen multiplayer in which objectives are spoken to each player through the Wiimote's speakers.

Wii Sports
A collection of four sports titles: Golf, Baseball, Bowling, and Boxing, Wii Sports is bundled free with the console in all regions except Japan. Under golf and baseball, the Wiimote acts as the club and as you swing the controller, the on-screen character mimics your motion. For bowling, you need to make an underhand motion, similar to real bowling. Boxing pitches the Wiimote as your right glove and the Nunchuk as your left

glove—you can thus punch as in real-life and swerve left to right in order to dodge an opponent's hits. Wii Sports uses Mii avatars to represent you.

Excite Truck
A fast-paced racing game, it uses the Wiimote in the horizontal position as a steering wheel. While you can swerve your truck left to right by moving the controller, you can boost yourself via the D-pad. The game will also play your MP3s via the Wii's SD card slot.

The Legend of Zelda: Twilight Princess
Widely heralded as the best Zelda game yet, this 70+ hour action-adventure-role-playing-game is perhaps the most ambitious undertaking by Nintendo. The game uses the Wiimote to make sword slashes, or throw a boomerang, or aim arrows, and more. The Nunchuk is used to execute spin attacks and for movement.

Miyamoto wanted a more modular hardware, something that could suit multiple purposes at minimal cost. The Wiimote thus has an expansion port for accessories. The Nunchuk, one such accessory, comes bundled with the Wii and is integral to enjoying FPS games and traditional software that require an analogue stick. The Nunchuk, too, houses accelerometers, but cannot be used as a pointer. This allows for some cool games such as boxing, wherein the Nunchuk can act as your left glove, and the Wiimote as your right glove, and you can box onscreen as you would in real life. Boxing, as part of Wii Sports, allows you to throw punches and even allows you to evade your opponent's punches by swaying your body left and right!

Another unique element to the Wii remote is the speaker. Of passable quality, the speaker does add a bit of aural feedback to a game: for example, it can output the sound of ball hitting racquet in a tennis game, the sound of a gun shooting and reloading in an FPS, or the sound of you reeling in your line in a fishing game. This

Of passable quality, the speaker does add a bit of aural feedback to a game: for example, it can output the sound of ball hitting racquet in a tennis game

The Nunchuk (left) adds to the fun of the Wiimote

apart, the Wiimote has the usual force feedback for a more tactile experience.

Finally, the Wiimote comes with 4 KB of onboard memory. This is used to store a user's personal settings and his or her personal avatar, dubbed Mii, of course, which can be created using the console.

Channel Wii
Nintendo extended the Wii Remote's TV metaphor to the realm of "channels." As hardware meant for the entire family, Wii offers more than *just games*: each avenue of entertainment/information is presented as a thumbnail channel by the Wii. Apart from the Disc Channel, where you can play both Wii and Game-Cube titles, Wii has the Mii Channel where you can create avatars of yourself (which later

appear in some games), a News Channel, a Forecast Channel, a Photo Channel, a Wii Shop Channel, an Internet Channel, and channels for each Virtual Console title.

While most of these channels are self-explanatory, notable among them are the Photo Channel, which displays your camera's photos and movies via an SD slot on the Wii. The Photo Channel also allows you to do some rudimentary editing to your pictures and videos, create slideshows, and play MP3 music to a slideshow. The Internet Channel is essentially the Opera Web browser optimised for the Wii and TV screen display (note that the maximum resolution the Wii can display in is 480p, or 720 x 480).

The Wii Shop is where you can buy additional games or content for your purchased games: the Wii will be able to play games from several old consoles, under its so-called Virtual Console feature—the NES, the SNES, the N64, the Mega Drive/Genesis, the TurboGrafx-16, the Commodore 64, and perhaps others not yet announced. You will also be able to purchase several brand-new games as well.

Most of these games will require you to purchase a "Classic Controller" peripheral. Each of these games will cost certain "Wii Points"—an NES title for 500 points, an N64 for 1000, a Mega Drive for 800, and so on—with 500 Wii Points being equivalent to $5.

Games downloaded from the Wii Store will appear as Virtual Console channels (a channel each for each game by default, although they can be grouped together) and can either be stored on the Wii's 512 MB of internal Flash memory or to an external SD card. The console will keep track of your purchases, so you can delete a purchased title and later download it for free. Each Virtual Console title will be locked to the Wii it has been purchased on; you cannot take these games on an SD card and play them on a friend's Wii.

ConnectiWiity
Out of the box, the Wii can communicate wirelessly via 802.11b/g. You can otherwise separately purchase a USB-to-Ethernet dongle if you don't have a wireless router. Nintendo hasn't shared its online libraries with third parties, and online multiplayer support isn't expected to arrive until early next year, at least from third parties. Meanwhile, two games announced—*Mario Strikers Charged* and *Battalion Wars 2*—support multiplayer over the Internet as well as locally. *Battalion Wars 2*, or *BWii*, will feature online assault, skirmish, co-op play, and four-player capture-the-flag.

Apart from local and Internet connectivity, the Wii can also communicate with the Nintendo DS. It has been suggested that the DS' touch screen will be used to interact with characters on the TV. At least one game—*Pokémon Battle Revolution*—has been noted as using this feature when it is launched later this year in Japan: not only can you import your Pokémon from the Diamond and Pearl DS version, you will be able to control the entire game using the DS alone. You can use the DS stylus to select attacks, targets, view status, switch out Pokémon, and

The Wii alongside the Wiimote: doomed or poised for a comeback?

even surrender. While the DS thus displays menus and stats, the Wii displays only the battle screens on your TV.

While You Were Sleeping

The Wii enters into a low-power state when not used, or switched off, much like a TV on standby. In this state the console can continue to communicate with the Internet. This always-on connectivity is called the WiiConnect24, and will be used to stream various data to your console while you sleep, such that when you next power on the system it has downloaded new maps, or weapons, or system/game updates overnight!

Other features of the Wii include a Message Board, which allows you to leave messages for your family or to send them across the Internet. For example, the Board can notify your friends about any new games you might have purchased. The Message Board is built around a calendar, and allows you to trade photos and text messages with cell phone users. The Wii also keeps a log of the games you've played and the amount of time you've spent on each game. The Wii Message Board alongside WiiConnect24 will allow a game developer to send you custom messages for a new map or a weapon as it is downloaded to your console.

The Wii is a brave vision, but perhaps an essential one for Nintendo. It favours aesthetics and simplicity over raw power; certainly a black sheep amidst the Xbox 360 and the PlayStation 3. Through Wii, Nintendo wants everybody to enjoy games and thus expand the market. In many ways this was the only way forward for the Japanese company. Only time will tell whether fortune indeed favours the brave, and if the Wii will see Nintendo sink to hell—or rise to heaven. ∎

readersletters@jasubhai.com

TAKE a CRACK

How would you create a Windows XP bootable CD that wouldn't require you to do any additional installation of drivers?

Send in your solution with the subject "Take a Crack", and your postal address, to **takeacrack@thinkdigit.com**

Create an XP CD that requires no driver installation!

Make a USB drive a key to boot into XP

Last month's solution

In what follows, we describe the procedure for solving last month's problem, but you might still experience problems. If you do, you'll need more information about your motherboard, as we've mentioned towards the end of this solution.

The USB booting feature is usually found in most new motherboards. For older boards, a BIOS update is required.

For our task, a USB drive of a capacity of at least 256 MB is required. If we need to include extra utilities, hotfixes, and service packs, then we need at least a 512 MB drive.

Use the "USB Disk Storage Format Tool" from HP for formatting the USB drive. You can download this 2 MB utility from **www.pctipp.ch/downloads/dl/32594.asp (http://snipurl.com/tacdec)**. Choose the USB Drive to be formatted, and select "FAT" under "File System". Enter a name of less than 11

characters for Volume Label, and click Start to begin formatting. For a 1.1 USB port, this takes no more than a minute.

After having selected "Show hidden files and folders" and deactivating "Hide protected operating system files", navigate to the root directory on which Windows is located, usually C:\. Copy the boot.ini, ntdlr, and NTDETECT.COM files from that directory to the USB Flash drive. Rename the "boot.ini" in C:\ to "boot.bak". Windows will not now be able to boot from the hard drive, and the USB drive will be the key to unlocking the computer.

Now to check whether your USB drive works or not! Restart your PC and select the USB drive as the First Boot Device in the BIOS. For this test, deactivate the "Quick Boot" and "Show Full Screen Logo" options in order to be able to monitor any BIOS-reported activities. Also, the "USB Legacy Support" and "USB 2.0 Controller" options need to be activated if available. Save your changes and exit the BIOS, and restart.

If you encounter a problem booting, look for an option in the BIOS that extends the response time of the USB drive, for example, the "USB Mass Storage Reset Delay" option found in the AMI-BIOS. Choose the highest value and gradually decrease the value until the problem pops up again. This should work, but if the problem persists, check your motherboard manual or visit the Web site of your motherboard's manufacturer for a BIOS update. ■
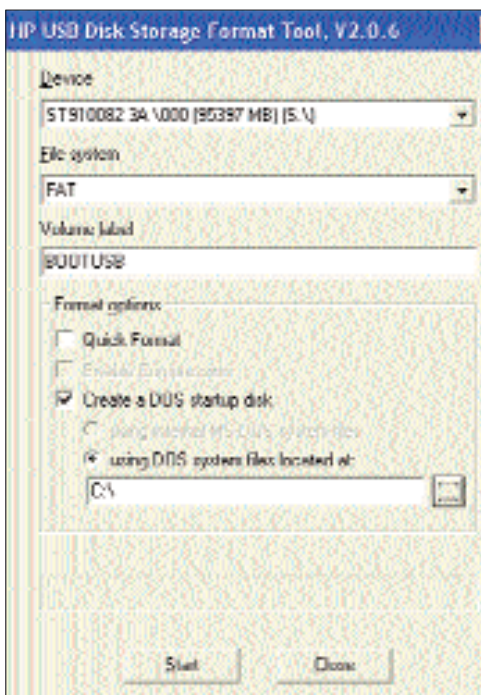
The HP USB Disk Storage Format Tool

2005   2025

In Search Of Order

Automobiles of the future will be cool and great and all that jazz, but exactly what technologies will help us drive faster, cleaner and safer?

Robert Sovereign-Smith

All of you reading this magazine do a myriad things with technology that just a decade ago you wouldn't have dreamt of. Technology has changed our lives, and we already know this.

Some things, however, just don't seem to change, at least not for the better!

Take driving your car for instance: sure you have a load of acronyms being advertised for cars today, which basically tell you there's technology going under the hood. But how much of it do you see? Anyone living in a big city in India will tell you that driving a car is becoming quite a painful experience. Traffic jams, pollution, rash drivers, state transport buses, truck drivers who have watched too much Formula 1—the list is never-ending.

The Carma That Ran Over The Dogma

Never before has this funny quote held so much truth in it! Finally, a drastic change seems to be on the horizon, and the concept of the "car" might be overhauled completely sooner than you think!

Cars today are all nice and comfortable. They have computer-controlled fuel-injection, braking, emission and noise reduction, airbags, and a whole range of other features on offer. However, the problem with cars today is, they're not helping us solve the main problem, which is...

...The Human Problem

Most of us live in overpopulated cities, and traffic jams are an everyday occurrence. We don't need to tell you, of course. Despite the efforts of a few to get us to think about our environment, we drive on, unperturbed. It doesn't matter that the world will run out of oil in less than half a century, or that the ozone layer is getting thinner by the second. We stubbornly refuse to car-pool, and prefer to be stuck in kilometre-long traffic jams of hundreds of cars with just a single driver in each of them... that's just the way we are!

The outcome? Skyrocketing petrol prices, an increase in road transport costs, and, as a result, inflation! We're paying for our callousness with our money *and* our health!

Technologies Of Tomorrow

There are hundreds of upcoming technologies aimed at transport vehicles, but not all of them solve the problems we've detailed above. For example, a killer music system that delivers 5.1 Dolby surround sound, a mobile version of a gaming console for the passengers of a car, or

satellite television enabled by a dish antenna that always stays locked on to the satellite of your choice are not exactly very helpful in preventing accidents, traffic jams, and the destruction of our environment.

Hybrid cars are being talked about a lot, and are looking promising for the near future, to help us depend less on oil.

Fuels

As alternative fuel technology goes, almost everything has been tried. However, recently, BMW released news of its Hydrogen 7 Series. These cars run on a hybrid of hydrogen and regular petroleum-based fuel. The difference is that instead of using the alternative fuel to produce electricity and then power the car, the Hydrogen 7 Series actually uses liquid hydrogen as a fuel in an internal combustion engine—actually burning hydrogen to power the engine directly.

A few lucky folks recently got to test drive one, and gave it very favourable reviews online. The shortcomings (yes, there will always be these) are the fact that currently, hydrogen refill stations are few and far between, and the fuel economy actually works out more expensive than petrol! BMW, however, blames this on a not-yet-perfected engine, which they promise to work upon, and the fact that no one wants hydrogen just yet! The theory is that once the demand increases, supply will become more prevalent and also cheaper.

The promising fact is that BMW is already working on a "hydrogen-only" combustion engine, which basically means "no petrol required"—which is precisely what we need!

This is just one example of alternative fuel technologies being looked at. Space doesn't permit discussing them all, but the idea is catching on as people realise that in 40 years or so, the average person will not be able to afford petroleum-based fuel, due to lack of supply. What's good about the research in this field is that we only seem to be considering "clean" fuels—the type that will not destroy the environment—not as much as petroleum-based fuels do, at least. Basically, you'll still be stuck in traffic snarls, but you'll be able to breathe for a change!

Adaptive Cruise Control

Currently, this term is used for technologies found in luxury sedans that monitor how close you are to a car in front of you, and use acceleration or braking to maintain a safe distance. Different companies have added various features to this "awareness" that adaptive cruise control seems to bring about in cars. Toyota / Lexus have scrapped the older radar method for optical sensors that will detect and avoid obstacles—such as other cars, pedestrians, a large cat that decides to cross just as you approach... of course, handling is left to the driver, but the brake is activated in order to prevent collision. This is more a collision prevention technology than cruise control, but the idea is the same.

A whole lot of manufacturers, including Mercedes Benz, Lexus, Audi, BMW, and many more, have started providing cutting-edge technologies such as automatic parking, advanced

collision prevention, adaptive cruise control, and more, as options on their luxury sedan class of cars. As always, we can expect this technology to filter down to economy-class cars in the near future.

BMW, for instance, offers a "Remote Park Assist" feature: basically, you stop next to an available parking spot, get out, keep a button on the remote pressed, and watch as the car auto-parks! If you feel the AI is being stupid, and your car is about to collide with another car or anything else, you just let go of the button and the car stops immediately!

A lot of manufacturers are also providing technology that tries and prevents *your car* from being tailgated. How does technology help prevent some other idiot from rear-ending you? Well it can't *stop* such accidents from happening, but it tries and prevents them. Sensors on the back of your car inform it of when another car is too close to you, and in such a case, your tail-lights start flashing and a warning light on your dashboard is set off. Different manufacturers have varying implementations: some actually compute the free space in front of you to slowly accelerate and increase the gap from the car behind; some just warn you, and set off a rear horn and flash tail-lights to inform the driver behind that he or she is too close for comfort.

Now before you start trying to imagine what havoc such technology will create in India, you

BMW's Hydrogen 7 series burns hydrogen in an internal combustion engine

should know that this feature is completely programmable—and it's not stupid! For instance, the acceptable distance between a speed of 0 and 30 kmph is obviously a lot less than what's acceptable at, say, 80 kmph. Plus, you have to imagine a day when every car has these systems: people would not be able to tailgate you even if they tried! Even at traffic signals, you would find nice and orderly, evenly-spaced-out car formations.

There are many different technologies that also help in minimising injuries when a crash is

inevitable: headrests are automatically adjusted when an impending crash is detected, to reduce whiplash; airbags are deployed with pressures that vary according to the speed you're going at, so as to prevent being hurt by the bag itself; seatbelts that change tension according to your speed, and many more!

The Future

Enough of what's already available in expensive cars today, what we really want to know is how close we are to the self-driving cars we've seen in movies and read about in tales of science fiction fantasy!

Surprisingly, we're not very far away.

Even in 2006, a lot of us cringe at the idea of letting a "dumb robotic car" drive us around at high speeds. But honestly, when you really think about it, don't computers already do that in the virtual world? Just pop in a racing simulator, or even an arcade racing game, and you'll find yourself playing against some very tough computer competition. They just seem to have a surreal amount of control on twisting and winding roads, and never seem to crash!

Yes, those are games, and it's different in real life where lives are at stake. Plus, as some will point out, the computer knows those roads very well, and is programmed to take a definite route, at a definite speed, following a pre-programmed racing line; but who said things have to be any different in the real world?

With GPS mapping being done of most cities of the world, and to an accuracy of a foot, what's to stop us from mapping it to, say, millimetre precision? You could conceivably feed all this GPS data to a car so it knows the routes and its position to the accuracy of a millimetre! Is that so unthinkable? It might take another 20 years, but it will eventually happen.

What about the changing nature of roads? Well, what about it? Honestly, cars today already have traction control, and know the difference between an icy surface, sand, tarmac, and rocky off-road adventures. But what if a kid runs across onto the road? Adaptive cruise control and collision prevention systems are already minimising the risk of accidents in such situations. Soon we should be able to improve it to the extent where it's better than human control. Much like braking, which is already computer-assisted in most new cars, humans are actually worse than computers at stopping suddenly. The automatic response of the human is to jam the brakes: a normal car would skid, lose control, and might even flip over on its side. It wouldn't stop in time either: studies have shown that a car takes longer to stop once it starts skidding. Computer-controlled braking "pumps" the brake several hundred times a second, preventing it from skidding and stopping the car faster and in a safer manner.

As for computer-controlled navigation in traffic, we have thus far only showcased *existing* technologies that are aiding in this. It's just a matter of refining them to the point where they're better and more reliable than humans. Sounds ridiculous, but driving is one aspect of

human ability that is actually quite logical and mechanical, and that's where computers excel.

It's Already Happened

No, you can't go out and buy a self-driving car just yet, but there's already a race event for them!

The US DARPA (Defense Advanced Research Project Agency) has an event called the Grand Challenge for researchers to showcase their self-driving cars and pit them against each other in a race.

The first race took place in 2004. A hundred and six entries were vying for the prize—1 million US dollars. Quite a few crashed and burned, while others just got lost along the

Stanford's Stanley—smart, sturdy and unafraid of its own shadow

way. None of the entries were even able to finish the race, leave alone finish it in the stipulated time in order to win the prize money. Some veered off-course, trying to avoid colliding into their own shadows; some screeched to a halt for tiny bushes, but failed to recognize huge boulders… we may laugh, but the amount of money and time that was invested in this event was serious.

For the 2005 Grand Challenge, DARPA raised the stakes to $2 million, and it worked! Stanford Racing Team's entrant, Stanley, safely completed the 132-mile desert course in just 6 hours and 54 minutes! Visit www.stanfordracing.org for more information on Stanley.

The 2007 Grand Challenge still gives away $2 million, but the difference is that it will be held in more real-world scenarios—in a city, with other cars and traffic lights on the road. We'll keep you posted on how it turns out. The fact is that in the 2005 challenge, five cars were able to finish the race, and this is promising: these cars actually were "thinking" and taking "decisions" on their 132-mile trek, in off-road conditions! If even a single car can finish the 2007 race, we will be very tempted to believe that DARPA's goal of replacing one-third of cars with robotic driven vehicles might actually come true!

A Vision

If cars can already think well enough to navigate in off-road conditions with no prior mapping of terrain, imagine how good they'd be if the route were actually mapped! Is it that hard to imagine a day, maybe less than a decade from now, when you don't need to learn to whistle just to stop a cabbie in New York, or dodge recklessly-driven buses to cross the street in Mumbai?

Imagine just hopping into a car, stating your destination, then sitting back as the car decides by itself what the fastest route to your destination would be—factoring in information it receives via GPS about traffic conditions, accidents (if any), and also the shortest route… except for the fact that people might not like the idea of giving up control to a robot, it all sounds hunky-dory.

Another aspect of cars that might change—if adaptive guidance systems do become a reality—is design. Right now, cars are designed a certain way because things like driver comfort, visibility, aerodynamics, etc., all come into play. What happens when a driver isn't needed? Will we stick to the designs we have or will we change them radically?

Whatever happens, prepare to see some really cool technologies and designs in cars in the next 10 years. Until then, try not to choke too badly on your way to work… and dream on! ■

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Leading The Charge

War is hell, and people die. However, technology can help minimise losses, and Shadab Ansari found a way...

Samir Makwana

Seven years ago, many brave Indian soldiers sacrificed themselves at Kargil to protect our freedom. Our warriors, who stand along our nation's borders risking life and limb need all the help they can get. It took the ingenuity of a 23-year-old from Lucknow to figure out a way in which tech could save lives on the front line!

Our borders are some of the most treacherous places on earth, and it's hard to spot enemy encampments or track enemy movement; still, soldiers risk their lives trying to spy on the enemy. But what if you didn't need soldiers to do this? A robot could provide accurate reconnaissance without endangering lives...

That's exactly what Shadab Ahmad Ansari thought of when building his invention, *Soldier Gear*.

Soldier Gear is an espionage robot controlled using a special military suit. It has a camera and microphone on it, which is used to send information about any location. This gear is to be used in defence warfare when vital information of enemy troops' location and strength are sought.

How much did it cost?

"Though the project was made out of components bought from the scrap market, it still cost me Rs 10,000. Most of the expenses were due to the trial-and-error method I had to use when making the circuits. If I had better knowledge of robotics and circuits, it would have worked out much cheaper," says Shadab.

What made him want to do it?

Shadab reminisces, "I was watching a movie based on the Kargil war. The miserable situation of Indian soldiers depicted in the movie made me want to create something to help them. Since I had already assisted a senior with his project of making a simple robot, I came up with a vague idea of making an advanced robot. I started from scratch-researching robotics on the Net."

Building Blocks

Soldier Gear comprises a printed circuit board, gearboxes of cars, parts of remote controlled toy cars, rotors, relays, batteries of various voltages, a machine belt, a vacuum cleaner hood, rubber bands, and various other everyday items bought from the local scrap market. Shadab actually used commonly-used adhesives as well as rubber bands to hold the components together!
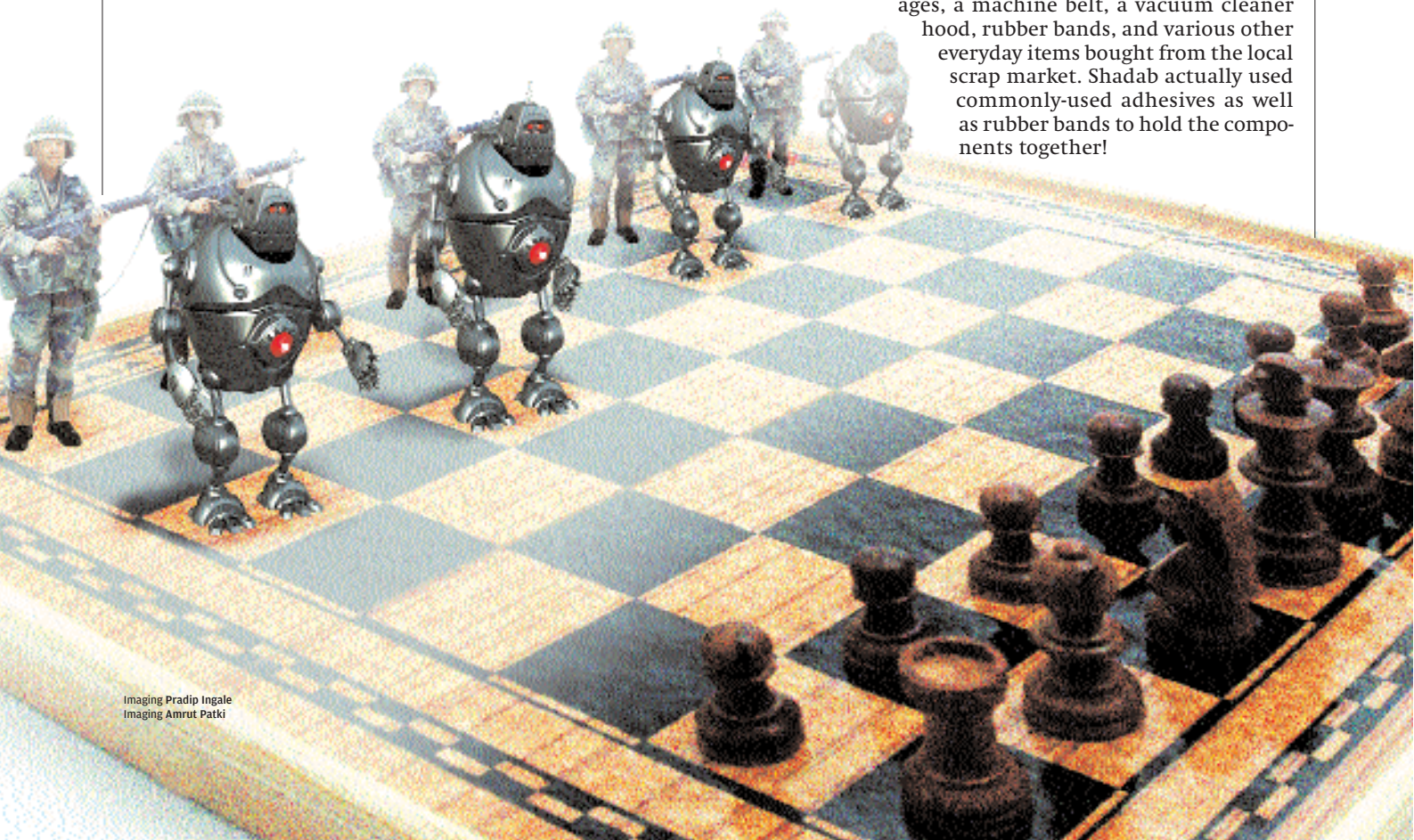
The Robot

The espionage robot resembles an Armoured Personnel Carrier (APC). Its basic task is to go out looking for enemy troops and transmit what it finds in audio-visual format, using AM signals. The robot can operate in varying terrain—land, air and water—and has an arm that mimics the function of a human arm, a camera to see with, and a microphone to record sound.

On the top, the robot has rotor wings, propeller heads and radar, the Ariel Eyeball, and the robotic arm. The base of the robot has a mine detection and deactivation circuit, and mattracks similar to those in an APC.

The Military Suit

This consists of two control units on either arm—the one on the left controls motion and the one on the right controls the robotic arm. The suit also includes LCD goggles and a headphone-mic combination.

The waist belt carries the voice recognition system, batteries, and a signal receiver. The voice recognition system acts as a security device so that only the chosen soldier can control the robot.

The Base Camp Computer

This acts as a monitoring tool for the back-end forces and higher officials. It is connected to the robot and gets all the data. It needs at least Windows 98 with Turbo C installed. In case anything goes wrong with the soldier who controls the robot, then the Base Camp Computer can control the robot as well as transfer the control from one soldier to another.

Air, Land, and Sea

Shadab says, "It was tough for me to make the robot fly, initially. Since the entire body is quite heavy, battery consumption would be

The creation—his ultimate Soldier Gear

high if I had to make the robot fly. That's why I segregated the robot into an aerodynamically-flying saucer that sits atop the robot."

Another innovative feature added to the espionage robot was the ability to swim. "This wasn't as easy as it sounds. Dip an empty glass into water with the mouth of glass facing down and you will see that the inner wall of the glass stays dry. I applied the same rule for the robot", says Shadab. He modified the body of a vacuum cleaner to make the robot body, and used a large tank to test it. He added propellers (like those used in submarines) to give it thrust. It worked!

Next, he wanted the robot to climb, mainly trees. This would help the robot get higher up and improve its chances of spotting enemy troops. The two mattracks on either side have rubber and spiked grips are used for climbing. When it moves forward, it's the rubber that grips, and when it moves backwards, the spikes grip. So it goes up a tree backwards. The movement of the mattracks on either side can be individually controlled.

The Accolades

The Institute of Electronics and Electrical Engineers (IEEE) veterans Society of India awarded him a certificate and Rs 10,000 for his invention. He has already applied for a patent for his invention at the SIDBI Innovation and Incubation Centre, IIT Kanpur.

The Defence Research and Development Organisation (DRDO) has invited him to demonstrate his invention, but for that he wants to improve his robot using better-quality parts.

The new model will feature a few more functions such as a Global Positioning System and Shadab wants to add inter-connectivity between two or more Soldier Gears, to improve co-ordination and efficiency.

When asked about future plans, Shadab says, "I've finished my B. Tech in Electronics and Communications, but have no concrete plans to go commercial. At present, I seek funds to make the next Soldier Gear better."

Well done Shadab, we wish you success! ∎

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The man in his military suit

The next generation of displays—those that go into the true 3D realm—is already here

Want to ogle Lara Croft's curves in her latest avatar? In 3D detail at that? IO2Technology, a US-based firm, has come out with what it calls the Heliodisplay, and you can actually project Ms Croft into the air and look at her from all sides.

The Heliodisplay is a family of interactive tactile 3D displays that project a floating image in the air, similar to R2D2's projector of *Star Wars* fame. There's no need to turn off the lights either: the Heliodisplay was designed for operation in a well-lit environment.

On the performance end, M2i, the top-end model in the Heliodisplay family, creates an interactive 3D display in thin air using lasers. By interactive, we mean *interactive*. You can move the mouse pointer just like Tom Cruise does in *Minority Report*. No need for special gloves or pointing devices—drag the cursor just like you do on a touch-screen. The unit ships with a remote for couch potatoes who want to enjoy real 3D interactivity while being too lazy to stand up!

This mesmerising display generates 16.7 million colours and has a maximum resolution of 1280 x 1024. It can project a 30-inch display with an aspect ratio of 4:3. It can be hooked up to a PC, TV, DVD, HDTV, as well as your favourite video game consoles.

We'd recommend that all geeks get themselves one, but at $60,000, you'll need to start your own Internet scam to be able to afford one!

The Heliodisplay

Storage
Cell Phones
Portable Media *Players*
Optical Media
Displays
Processors
Operating Systems

1

2

3
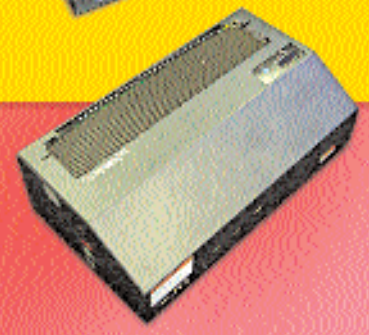
Tech That Made It Big in 2006

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The Geek's Pickings

In Internet time, we need round-ups to remind us about what happened when. So here's what just happened...

Ram Mohan Rao

Some heads here at *Digit* fumble when asked to name the Prime... umm, Chief Minister of our own state. But we sure know our E3 and U3 from our T3. So, even as magazines with important-sounding names like *"Time"* and *"India Today"* are gearing up for their yearly round-up, covering such topics as... umm... actually, we're not sure... we're doing our own round-up of the year that's been, in terms of what really matters—storage, sound, software, and such—in seven categories.

We've graduated from obsessing over frogs and snails and puppy-dogs' tails, but we're still little boys deep down. We're so innocent, things like terabyte hard disks and potential pod-party-poopers excite us. Here's our list of Stuff You Care About—you can always Google "chief minister of (your) state" later!
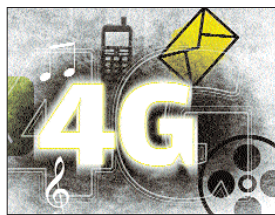
STORAGE

We've been inching ever so much closer to terabyte territory. And we're more than halfway there: 500 GB hard disks are available at your local store. We knew in 2005 that this would come to pass this year, courtesy perpendicular recording.

That technology was pioneered by Seagate, and as you might know, it promises considerably higher areal densities. In perpendicular recording, the magnetic "domains" that hold the bytes are oriented perpendicular to the plane of the platter, as opposed to the old way, where they were on the plane. Such a seemingly small change paves the way for a goodish upgrade—up to ten times the capacity! The first 750 GB drive shipped this year in May. Kudos to Seagate!

Samsung surprised us with "hybrid" hard drives for laptops: they showed off prototypes in April. These hybrids have 1 GB of Flash goodness, and the drive is asleep most of the time—cutting down on power consumption by something in the range of 50 per cent! What happens is, the Flash works while the drive sleeps, and when it fills up, the drive wakes, copies the data, and happily slumbers again.

We're just dying to get our hands on one of these for our Desktops, too! And we won't have to wait long, it seems—January 2007 for the developed world, and sometime later for us Indians.

Jaded as we've become with price drops, Flash is one area that hasn't failed to surprise.

Illustration **Pravin Warhokar**

Prices are dropping so rapidly, we're wondering when they'll begin giving out thumb drives for free with hard disks! Capacities have gone up to levels that make us double-check our decimal points: for example, in the RED ONE camcorder we touched upon in our November issue, the Flash memory is upgradeable to 128 GB!

Flash prices are dropping like heavy, over-ripe mangoes

For thumb drives, 256 MB, which was considered pretty OK in the beginning of the year is a sorry figure now, and any drive below a gig is most certainly small. Two GB is more like it now for any one of us.

The hard drive is inching ever so closer to death. We were happy with 40 GB disks just yesterday, it seems, and how much longer can it take for 40 GB of Flash to become *de rigueur*? And we'll be pretty happy with that much, until...
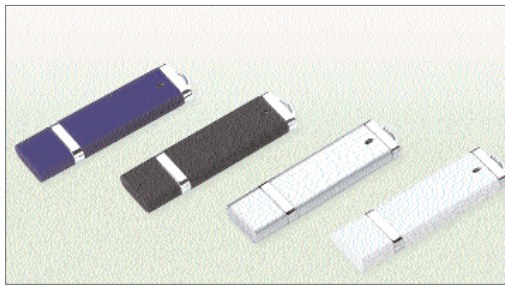
Until the hard drive catches up again. They're talking about HAMR (Heat-Assisted Magnetic Recording), for instance, which will boost capacities to a gazillion gigabytes or whatever it is we've come to expect.

CELL PHONES

2006 saw cameras on phones go way beyond the VGA and 1.0 MP mark, touching 3.2 MP. Naturally, we're talking affordable models, not those for the rich. March saw an interesting entrant, the Sharp 904SH. It did away with fingerprinting, looking at your face via a second camera instead to decide it's you who's holding the phone.

Next step: video recording. Why not? The SE P990i and the Nokia N93, as examples of what 2006 has had to show off with, support video recording at 30 fps—and video calls over 3G networks. Don't ask us whether these phones have so-and-so feature... yes, they do. And are the cameras good? Yes, they are. Good enough for a band to have recorded an entire video on the N93. To view that video, head to **http://music. yahoo.com/ar-20234562-videos-- Rob-Dickinson**.

Talking about 3G, the latest evolution of CDMA, called EVDO (Evolution Data Optimized) had come

"Cell phone" doesn't do the N93 justice

out sometime in 2005, by network providers such as Sprint, but deployment was much more widespread by the early part of this year. EVDO was there for the asking in several areas such as North America, Australasia, and Japan, offering desktop-like broadband speeds on cell phones and laptops—typically in the range of 1 Mbps and lower; no need for Wi-Fi coverage. Since we don't get that much even on our broadband lines, and since there's no point you getting an EVDO-enabled phone, and since envy is one of the seven deadly sins, we won't go on about how cool EVDO is!

"Designed to be" an oxymoronic "indispensable luxury" as Nokia calls it, the 8800 is one of the latest in the not-so-new series of "lifestyle phones." The emphasis here is on design, the next frontier: the ad goes, "Created for your ultimate pleasure, its graceful looks and seamless functions will leave a lasting impression. Every aspect has been meticulously considered... from the laser-cut curves of its body... this phone is a masterpiece. Let the exquisitely composed ringing tones evoke your innermost emotions." What, a phone created to give us pleasure? That's a new one. The "ringing tones" should evoke our innermost emotions? That's even newer! And here we poor slobs are, with polyphonic ringtones that jar at worst and charm at best!

Along similar, narcissistic lines, the Motorola RAZR V3i Dolce & Gabbana is gold-plated. (For your pleasure, naturally.) You did expect some tie-ups somewhere with design houses of fancy-sounding names, didn't you? Well, we think "Dolce and Gabbana" is as fancy-sounding as it gets. Expect more of this neo-urban phenomenon in 2007!

And yes, the next "version" of Bluetooth—UWB (Ultra Wide Band) promises 40 Mbps to 1 Gbps transfers—and though people are asking if UWB will soon be coming to a cell phone near you, we wonder if we even need such speeds, but then again, someone will call us stupid in '07 or '08 for having said this.

PORTABLE MEDIA PLAYERS

If 2005 was the year of the pods and their clones, 2006, too, was the year of the pods and their clones. Only, the pods had grown screens. No, actually, it wasn't a revolution or anything: they'd had screens before, but 2006 saw them become much more part of standard equipment.

You know you're in an age of something when more of that something doesn't strike wonderment: today, new, convergent gadgets

don't make us go "wow." Product after product came out this year only to have us mull ponderously over the spec sheets rather than go "wow." If we saw FM *and* AM radio on a portable media player, we took it in our stride, and lived our lives.

As of today, when you go looking for a personal media player (PMP), it's pure mix and match. Tick-mark the features you want and there's a product waiting for you. A 100 GB disk device with no screen and with FM radio, which can play back video and record TV and has a remote. Something with a 3.5-inch TFT, which is an MP3 and MP4 player, DVD recorder, e-book reader, and a photo album. Perhaps it's got a camera as well. It's all good.

With hard drives being the biggest consumer of power in these gadgets so typical of

For the zillionth time, we ask: will the Zune kill the iPod?

2006, and with Flash all poised to get bigger like we said, all we can expect is more battery life—the most obvious bottleneck to ultimate portability. Flash apart, too, the batteries are getting better—various i-things from a company called iLuv boost the iPod Video's battery life to something that would have sounded ludicrous last year—50+ hours!

You've heard quite enough about Zune, we presume, and how it'll create wireless communities of music-oriented people. But this is an official year-end report, so we can't leave the Zune out—Microsoft finally got in. As of this writing, the jury's still out on "iPod-killer or still-born." Then someone "attacks the Zune—For Good Reason," in the 2,128,319th such blog post. Why is everyone writing so much? It's just a PMP, and yet, the Internet is still agog with iPod vs. Zune.

Or *is* it just a PMP? Turns out it's not! Going by the Xbox roots of the gadget, it'll probably

As of today, when you go looking for a personal media player, it's pure mix and match

be more... one indication is that the Zune could be part of Microsoft's Live Anywhere network. Zune might therefore extend the PMP into the gaming realm. And what is Live Anywhere? Space doesn't permit a full discussion, but Live Anywhere is about accessing online games as well as digital multimedia "anywhere," whether on Xbox 360, Windows Vista, and... probably Zune. You get something called a "gamertag," a set of "achievements," and a "list of friends." These are synced between devices, and one player on an Xbox 360 and the other at a PC can play each other as easily and seamlessly as two players at two Xbox 360s.

Getting all newsy, "Will The iPod Fight Back?" is our question. There's supposedly an iPod with a touch-screen in the works (it's rumoured to be released next year). Apple has been hiring game programmers as well for the iPod, and NVIDIA recently announced it will be supplying video chips for the iPod—so 3D gaming on the iPod may not be far away, either.

Touching upon the Archos 04 series, these are ridiculously-multifunctional do-it-alls. The Archos 604-WiFi gives you Web access via the Opera browser, a touch screen, a widescreen display, audio and video recording, an inbuilt speaker, and can be used as to stream movies and music. Optionally, it can record TV, and it is also IPTV-compatible. And it can be used as a camcorder. Etc., etc., etc.

Those et ceteras define PMP evolution in 2006.

OPTICAL MEDIA

When we spoke about the Blu-ray / HD-DVD war in *The Battle Of The Blue*, in our December 2005 issue, there were several "D"s wanting to come up. We thought China would do something about its EVD (Enhanced Versatile Disc). Somehow, things seem not to have worked out, and it's hardly in the news now. Blu-ray and HD-DVD have, of course, arrived, as expected, on-time. Blu-ray, in fact, has even made it to Indian shores, with the recorder priced in the range of half a lakh.

It's happening because of HD movies, of course, and when you realise what Blu-ray discs will be used for besides backups—about six hours of HD movies on a 50 GB Blu-ray disc—suddenly, the capacity doesn't seem so mammoth any more, and it seems like a virtue has been made of a necessity.

March, Toshiba launched the world's first HD-DVD player in Japan, beating Blu-ray to market, and also the first laptop to feature an HD-DVD drive. April, Toshiba's players hit US store shelves. Later, in May, Sony unveiled a line

Blu Ray: The real point is, the readers came, the recorders came, a few titles came. But nothing really seems to have come of it...

of notebooks, the first to include a Blu-ray drive: the Sony VAIO AR can display movies at full 1080p resolution. September, Panasonic unveiled the world's first Blu-ray Disc (BD) recorders. These support both BD-RE (recordable) and BD-R.

Now, they were planning hundreds of movie titles for Blu-ray by year's end, but that's hardly happened. The titles were few and far between, hardly compelling reasons for getting a player: August 31, MGM Home Entertainment announced four BD releases slated for release in November. Twentieth Century Fox, too, announced its first Blu-ray releases the same day. November, Twentieth Century Fox released *X-Men: The Last Stand* on BD.

The real point is, the readers came, the recorders came, a few titles came. But nothing really seems to have come of it. Why would one invest in an (expensive) Blu-ray laptop for backups? Or for a few movies? And what if Blu-ray turned out to be the wrong choice? When would the right time to upgrade be? Or, what if a new format were to trounce the other two?

That new format might well be HVD, Holographic Versatile Disc. We've spoken about holographic storage technology several times before, and now we find there's even an HVD Alliance (**www.hvd-alliance.org**). A TB of data on a regular-sized disc. Twenty times Blu-ray's capacity.

Why not just wait for HVD? The future's anything but crystal-clear.

DISPLAYS

"Booming sales of flat-panel television displays is leading to unprecedented research and development in the sector with the promise of new technologies designed to capitalise on market demand." That's from a business news article, and pretty much sums up 2006 where displays are concerned.

From a forum: "I feel that LCoS and DLP both have better pictures than Plasma or LCD sets. The picture just seems warmer." Typical 2006. Too many choices. Everyone's being too subjective. In fact, the LCD vs. Plasma battle seems never-ending—just try Googling "lcd plasma" and you'll get *14 million* results as of this month—which is certainly indicative. ("crt lcd" gives only a million and a half!)

2006 was the year of choices; the year of new technologies, as in new technologies being advertised and sold; and in India, the year of the LCD beginning to gradually replace the CRT. 2006 was also the year of widescreen making it big. Even big made it big: the idle rich in India were able to shop right here for huge displays.

Even we simple folk had 20-inch and 24-inch flats-screen aspirations.

So what are all those choices we're talking about? As of today, if you want to buy a display, you can choose between CRT, LCD, LCoS, DLP, SED, and Sony's offering, SXRD.

One thing that mildly surprises us is that nobody seems to be doing anything to make CRTs—even flat CRTs—any better!

Now consider ad pitches like "virtually no motion artefacts or image streaking." "Strikingly clear, non-pixelated images with perfect geometry." What are these for? Any of the above-mentioned technologies, is the answer! Well, LCDs do suffer from streaking, but the degree has been decreasing so rapidly, LCDs are now a very viable option for gaming, too.

Space doesn't permit a technical discussion of the different technologies, so here's about Sony's SXRD. We can't lay our hands on one, so all we can say is... over 2 million pixels per panel mean superior clarity. Smooth, film-like images are possible: there's a true sense of depth and dimension. Watching sports is like looking through a skybox window.

That was from an ad... we did that just to show you that they all seem to be saying the same thing! "Choices" certainly is the buzzword in 2006 display technology—apart from, of course, "HD."

So what do we do apart from gawk? A few things. First, remember that graphics cards and gaming consoles are sporting HDMI (a high definition, digital interface, with a single cable for video and audio), so you can use your LCD panel to its full potential. Second, remember that you

Sony's SXRD technology has gotten videophiles drooling

might want to upgrade to a good-quality display panel soon, because Vista will demand it (we know you'll upgrade anyway). And third, take comfort in that essential fact of human nature: you get used to what you have.

PROCESSORS

Multi-core is the new gigahertz, at least in warspeak. Dual-core was a fancy term even in mid-2005; in 2006, dual-core processors became so cheap, it made no sense to go with a single-core any more. Dual-cores, once thought of as hype, turned out to give significant performance gains when multi-tasking, and even with single tasks like video encoding.
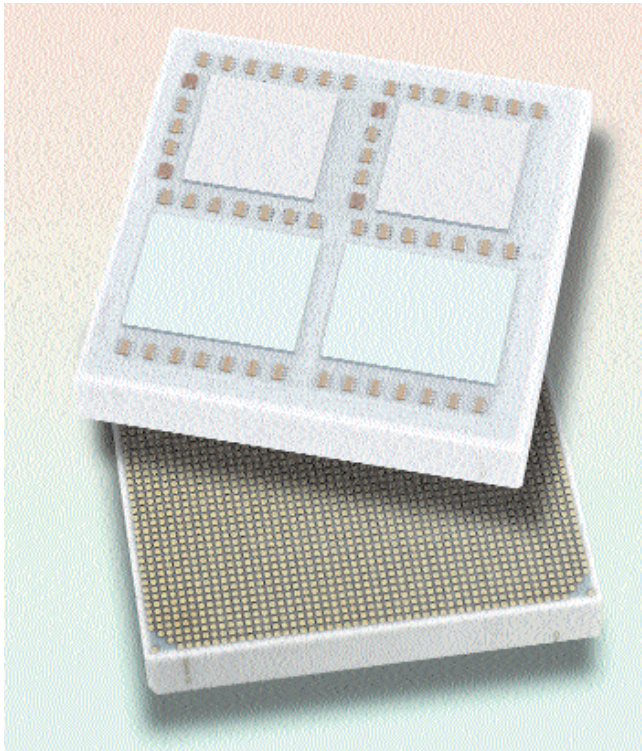
Four cores on a chip: very welcome indeed!

And why stop there, once the first power of two had been breached? Intel's quad-core Xeon 5300 and Core 2 Extreme QX6700 were unveiled in November, making it to the second power much before AMD. Some software—such as Adobe Premiere Pro—can already take advantage of four cores, but as you'd expect, there are far fewer such programs than can put two cores to good use. The QX6700, however, in tests, showed it could spread the workload

The CPU and GPU are engaged in some major billing and cooing

when handed two or three processor-intensive tasks. Enthusiasts—those of the deep-pocketed persuasion—were happy.

AMD will reveal their own quad-cores—currently called "Barcelona"—sometime in mid-2007, so there's no reason to get excited yet. But anyway, AMD is never to be left behind, as the phrase goes, and has figured out how to offer bleeding-edge performance by placing two Athlon 64 dual-core chips in one machine: the "4x4", which will probably have begun shipping by the time you read this.

The big surprise merger of the year (apart from Google and YouTube) for us was, of course, AMD taking over ATI. The effects? Delightful twists in the AMD/Intel saga, of course. "Fusion" technology is already in the works: this new kind of processor integrates CPU and GPU at the silicon level, which could mean... a lot of things. Better frame rates, anyone?

Perhaps more than that. AMD indicated that it is developing more than just one CPU/GPU platform, which will make for "step-function increases in performance-per-watt relative to today's CPU-only architectures." In press releases, AMD didn't describe the new chips as high-end graphics solutions, but as solutions that provide the "best customer experience." Fusion is expected to debut in late 2008—quite a while off, so no point getting excited, again.

But they're already talking about "Stream computing" for now. From the new ati.amd.com: "Introducing the AMD Stream Processor—the first, dedicated, GPU-based solution to address the needs of high-performance computing users. Featuring the AMD R580 GPU, and a 1GB memory buffer... the AMD Stream Processor... (enables) the most direct access to GPU resources in the industry."

Yes, the CPU and GPU are engaged in some major billing and cooing. GPUs are taking on a more generic role—you can already offload calculations onto the GPU, which could traditionally only be done on the CPU. For example, Stanford University has announced new software that will enable the use of *graphics* cards—not just CPUs—in their Folding@Home distributed computing project. (See *We Want You, Digit,* November 2*006*.)

Breaking away from the powers-of-two rule, Intel is talking about an 80-core CPU. They call it a "terascale research chip": 80 cores on one piece of silicon. Who'd need that and why is a question for another day, another year. Will the GPU become a core—or a few—on the CPU? Or the other way round? Who's to tell?

OPERATING SYSTEMS

It's been an eventful year, well filled-out with people gushing over Vista all through its (very) public beta testing programme. Overall, a good idea for the big M—with the whole community getting in on testing, more bugs have been reported and fixed than would ever have been with in-house testing.

As we write this, the news is all over—Windows Vista has "gone gold"—it's ready to hit the markets in the end of January, and anticipation fills the world.

Vista comes with a whole lot of bells and whistles—notably the pretty Aero interface—beyond that, the Vista user experience is going to be much friendlier, and the new ReadyBoost feature will let you use your flash drive to kick up performance as well.

There are still plenty of kinks to be ironed out—especially the impact on gaming performance and the ongoing battle with antivirus companies over the blocked kernel—but 2006 was easily the Year of Vista, for not a month passed by without it being discussed.

The Linux population hasn't been resting either. The ever-increasing popularity of the newbie-friendly Ubuntu has given hope to the community—perhaps there's a lasting place for Linux on the desktop after all. GNOME seems to have taken the lead in the battle of the Desktop Environments, with both SuSE and Fedora Core (which formerly came with KDE) switching loyalties.

To combat the growing threat of Aero being overly pretty (huh?), Novell came up with their own 3D Desktop—called XGL, it brought an OpenGL-based prettiness never before associated with the Penguin. You can now flip between desktops on a cool 3D cube, in addition enjoying to a truckload of special effects with your windows.

Apple went the Intel way, and naturally, Mac OS X followed. The x86 compatible OS X Tiger meant a lot to hackers (not the malicious kind), who went about happily installing it on their PCs for dual-boot joy, which also led to the release of BootCamp—Apple's way of saying "Don't hack, just use this to get XP on your Intel Mac". Genius!

Rounding It Off

Excitement is accelerating exponentially, if that were possible. We're hedging our bets on the idea that exciting though 2006 was, '07 will be more so. (The extra broadband we're going to get will help.) The general idea is, time today *is* Internet time. At this rate, there's got to be a new law to state that each period of time will appeal to the geek's will, wish and wisdom more than the previous one did. ■

ram_mohan@thinkdigit.com
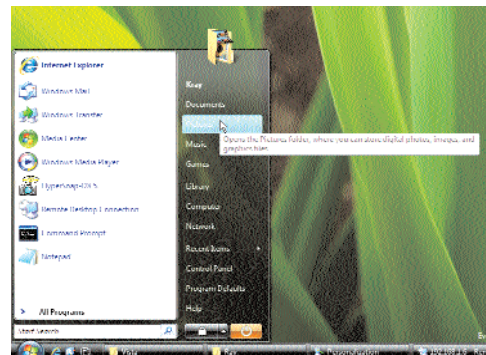
Vista's not all about eye-candy, but it does well in that department

GeForce 8800GTX
Unified Shaders On A Rampage!

The NVIDIA G80 (8800GTX), with 128 Shader units, is the first DirectX 10 compatible graphics card ever. The card sports an attractive-looking cooling solution well in keeping with such a large card (it's 11 inches long). Testing saw the card running a bit hotter than the G70 and G71 series. It ran at 80 degrees under load; the G71 had rarely crossed the 60 degree mark!

The G80 has 768 MB of GDDR3 memory (1.8 GHz). *F.E.A.R.* saw a staggering 150 fps at 1024 x 768 with 4x Antialiasing (AA) and Anisotropic Filtering (AF) enabled. Similarly, *Prey* saw just over 202 fps at 1280 x 1024, at the highest settings.

For now, this is the fastest DirectX 9 card ever! Did we mention it supports SLI as well as Quad SLI? ATI's response—the R600 is highly anticipated, and if it's anywhere in the performance region of the G80, we should be getting a lot more realism in our games a whole lot sooner than we could've imagined!
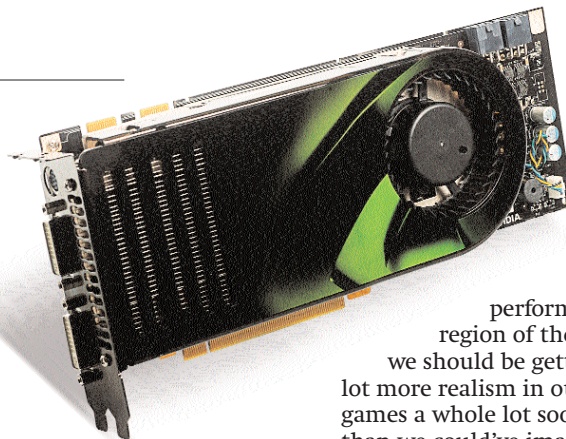
3D Mark Comparisons

	3D Mark 2006	3D Mark 2005
ASUS X1900Xt	6094	12081
Leadtek 7950GX2	8390	14826
MSI 7900GTX	6366	11424
8800 GTX NVIIDA (reference	10332	16493

Specifications
681 million transistors; 128 shader units (Unified Shader Architecture); 575 MHz core speed; 1350 MHz Shader speed; 1800 MHz memory speed (GDDR3); 384-bit memory architecture

Contact: **NVIDIA Corporation**
Web site: **www.nvidia.com**

RATINGS	
Performance	★★★★⯪
Features	★★★★○
Ease of use	★★★★○
Overall	★★★★○
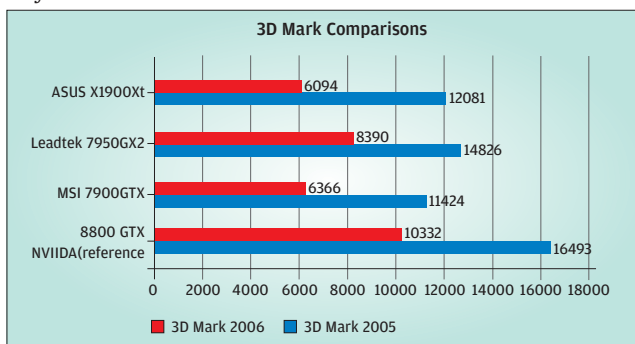
Razer Pro Click V1.6 and Pro Pad
A Professional's Delight

The Razer Pro Click is a 7-button, 1600 dpi mouse targeted at designers and engineers who need to work with graphical software with pinpoint precision. It's shaped to perfectly fit your palm. The Pro Click lets you set sensitivity on the fly, using one of the seven buttons and smooth scroll wheel. All the buttons can be assigned custom functions using the bundled software.

The Pro Pad that comes with it has two surfaces—one for better gliding speed, and the other for better control over the pointer.

This is a precise mouse, and reduces fatigue caused by prolonged use. Recommended for professionals, and at Rs 4,050, it's certainly worth the money.

Specifications
USB 2.0; 1600 dpi resolution; seven buttons; on-the-fly sensitivity adjustment

Contact: **Razer (Asia-Pacific) Pte Ltd**
Phone: **0065-6224335**
E-mail: **terence@razerzone.com**
Web site: **www.razerpro.com**
Price: **Razer Pro Click v1.6 Rs 2,700; Razer Pro Pad Rs 1,350**

RATINGS	
Performance	★★★★⯪
Features	★★★★○
Build quality	★★★★⯪
Value for money	★★★★⯪
Overall	★★★★○

A-DATA Oriental Elite 512 MB
Scorcher From The East

A-DATA is a well-known name in computer memory and Flash drives. The Oriental Elite is a family of fast Flash drives with an artistic touch and customisable design. As the name suggests, the design of the drive is very "oriental," and you can slide the plastic casing out and change the faceplate to your liking—it comes with two different faceplates you can use.

This drive comes bundled with a USB extension cable and a mini-CD with utilities that let you format the drive, allocate partitions, and set a password for security.

This is the fastest Flash drive we have tested thus far! It took just 8 seconds to copy a 100 MB file using the USB 2.0 interface.

At a price of $21 (Rs 990), this is a perfect gift for tech-savvy art fans.

Specifications
512 MB capacity; USB 2.0 interface

Contact: **KMI Business India Ltd**
Phone: **022-30224715**
Web site: **www.adata.com.tw**
Price: **$21 (Rs 990)**

RATINGS	
Performance	★★★★⯪
Features	★★★★⯪
Build quality	★★★★⯪
Value for money	★★★★⯪
Overall	★★★★★
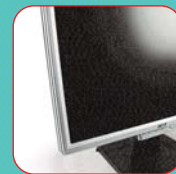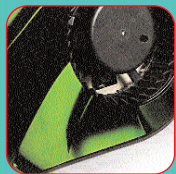
Acer AL1916W
A Middling Widescreen

Acer's AL1916W is a 19-inch widescreen monitor with a resolution of 1440 x 900. Aesthetics have been kept in mind—the AL1916W is quite slim with an attractive bezel. The only sore point is the extra space used by the control buttons on a small panel of their own, which juts out at the bottom of the screen. Acer also excludes DVI connectivity here—all you get is a single D-Sub connect, an absolute crime considering 90 per cent of today's graphics cards support dual DVI connects!

The AL1916W didn't do very well in our gamut of display tests—we noticed ghosting effects while gaming and some colour overlapping. It performed decently with regular applications, however. To be honest though, most users won't be aware of the ghosting—it's quite subtle—but it's there!

All said and done, at Rs 14,999, the AL1916W is a decent monitor, but there are others out there who deserve a more approving nod. And then there is the sorely missed DVI input.

Specifications
6-bit TN (twisted nematic) panel; 19-inch widescreen; 16:10 aspect ratio; maximum resolution 1440 x 900; contrast ratio 700:1; brightness 270 cd/m^2; 5 ms response time; D-Sub connectivity

RATINGS	
Performance	★★★◌◌
Features	★★★⯪◌
Build Quality	★★★★⯪
Value for money	★★★◌◌
Overall	★★★◌◌

Contact: **Acer India Pvt Ltd**
Phone: **00918025219520**
E-mail: **rajesh_aiyar@acer.co.in**
Web site: **www.acer.co.in**
Price: **Rs 14,999**

Apple iPod Nano 4 GB
Except For The Earphones...

The new iPod nano features a vivid LCD screen—useful for viewing photos. Its good looks are backed up by the superbly intuitive interface, driven by the ergonomic click-wheel. It is Flash memory-based, which means skip-free music and a tremendous saving on battery power—it played for almost 15 hours, which is actually better than the claimed battery life.

The bundled earphones need serious looking into—though the treble is crisp, the bass is disappointing even with the bass booster on. Also, there is no FM radio or voice recorder.

It appears as a USB mass storage device when you connect it to your PC, so you can carry around your data.

The rated capacity is 4 GB, but it only gives you 3.7 GB—the rest is for the firmware. You need iTunes to transfer songs to the playlist.

Frills include Outlook address book synching, games, and a stopwatch. Get a good set of earphones and you won't regret having bought this one.

Specifications
4 GB Flash memory; audio format: AAC; 1.5-inch colour LCD; earphones; USB 2.0 dock

RATINGS	
Performance	★★★★⯪
Features	★★★★⯪
Ease of use	★★★★★
Value for money	★★★★⯪
Overall	★★★★⯪

Contact: **Apple Computer International Pvt Ltd**
Phone: **1800-425-4683**
E-mail: **indiainfo@asia.apple.com**
Web site: **www.apple.com**
Price: **Rs 13,200**

AOC LM925
The Office Workhorse

The LM925 is a non-widescreen TFT with analog (D-Sub) and digital (DVI) connectivity. Our biggest gripe was the rather plain-jane, bulky stand, and the dull black finish. Pardon us for these frivolities, but we do like sleek curves (on our LCDs, too).

This panel clearly isn't for gamers—we had problems in most games, particularly during indoor scenes and dark areas—this smacks of poor contrast ratio. Movie-watching wasn't the experience it was supposed to be either—there is noticeable ghosting.

The LM925 is targeted as an office monitor, and it delivers to that end. At Rs 14,500, it's a good buy for the corporate; the home-entertainment segment needs to look elsewhere.

Specifications
Maximum resolution: 1280 x 1024; contrast ratio: 500:1; response time: 8ms; brightness: 270 cd/m^2; power consumption: 55 W; pixel pitch: .294 x .294 mm; VESA mount

Contact: **TPV Technology India**
Phone: **0124-2806116 / 17**
E-mail: **info@in.aocmonitor.com**
Web site: **www.aocmonitor.co.in**
Price: **Rs 14,500**

RATINGS	
Performance	★★★⯪◌
Features	★★★◌◌
Build Quality	★★★◌◌
Value for money	★★★◌◌
Overall	★★★◌◌

Nokia E70
"The Best Of Both Worlds"

Here's a full-fledged corporate companion with Communicator-like features, sporting an extremely crisp screen, excellent for browing!

For a business cell phone, the E70 has a very good MP3 player, though Nokia bundles only a single earbud with this one. A 2-megapixel camera is included. In keeping with its business audience requirements, the E70's got a 1150 mAh Li-ion battery—plenty of talktime!

The E70 can be funky and suave—the best of both worlds!

Specifications
S60 version 9.1; weight: 127 gm; 24-bit colour screen (352 x 416); QWERTY + regular keypad; 75 MB internal memory + miniSD expansion

Contact: Nokia
Phone: **30303838 (Nokia Care)**
Web site: **www.nokia.co.in**
Price: **Rs 24,839**

RATINGS	
Performance	★★★★☆
Features	★★★★☆
Build Quality	★★★★☆
Value for money	★★★⯨☆☆
Overall	★★★⯨☆

SanDisk Sansa e260 4 GB
Good Features, Great Price

This 4 GB flash memory-based player has many features crammed into its beautiful black exterior. The e260 is built rugged, with a scratch-resistant alloy back. The screen, however, is quite susceptible to scratches. It is sleek, but not as much as the iPod nano.

The 1.8-inch, bright TFT LCD displays 65K colours, but has an extremely narrow viewing angle. Along with music, you can also view JPEG, PNG, GIF, BMP, and TIFF images. Video transcoded using the bundled application can also be viewed.

The animated GUI is very well made and easy to use. The control wheel glows blue while in use, is quite ergonomic, and makes navigating the interface very easy. The buttons are a bit stiff, and you will more often than not suffer from sore fingertips.

There are two modes of USB connectivity: MTP to sync with WMP, and MSP to

Contact: Rashi Peripherals Pvt
Phone: **022-67090909**
E-mail: **naviderc@rptechindia.com**
Web site: **www.sandisk.com**
Price: **Rs 13,995**

RATINGS	
Performance	★★★★☆
Features	★★★★⯨
Ease of use	★★★★☆
Value for money	★★★★☆
Overall	★★★★☆

Pinnacle-to-go
Watch, Capture, Enhance, Enjoy!

Pinnacle-to-go is an external TV-Tuner that sports a flashy, diamond-shaped look.

Picture quality is very good, with little noise. Thanks to the S-Video input, Pinnacle-to-go makes it easy to capture, preserve and enhance AV content from analogue and digital camcorders, digital cameras, and even TV.

With the bundled Pinnacle Studio QuickStart, video editing is easy. The Pinnacle MediaCenter PVR software turns your ordinary PC into a Media Center PC, complete with a full-function remote control. Convert analogue video footage, photos, and TV shows to digital. You can also edit videos and add exciting effects and music. To top it all, you can encode video to a variety of formats to be able to watch it on a DVD Player, Apple iPod, Sony PSP, or TV.

Creating DVDs from home videos to give your friends and family has never been easier. The high-speed USB interface provides for easy connectivity to the PC. The only feature missing is the ability to connect directly to a CRT, but we're not complaining.

Specifications
TV signal: PAL, NTSC, SECAM; connecting ports: Coaxial, S-Video; recording formats (TV-Tuner): MPEG-1/2/4, DivX; software video formats: Input: DV, AVI, MPEG-1/2/4, DivX, WMV, non-encrypted DVD; Output: VCD, SVCD, DVD, DV, AVI, DivX, RealVideo 8, WMV9, MPEG-1/2/4

Contact: Pinnacle Systems, Inc.
Phone: **09811904809**
E-mail: **adey.extern@pinnaclesys.com**
Web site: **www.pinnaclesys.com**
Price: **Rs: 5,500**

RATINGS	
Performance	★★★★⯨
Features	★★★★☆
Ease of use	★★★★⯨
Value for money	★★★⯨☆
Overall	★★★★☆

show up as a USB drive. A microSD slot augments storage capacity.

Battery life is long—something every traveller will like; it lasted a total of 19.5 hours with continuous MP3 playback! Another good thing is that the Li-Ion rechargeable battery is user-replaceable. The decent earphones complement the e260 well.

There are the usual frills such as FM radio, Line / voice recording, and media functions such as playlists, shuffle, and seven presets. At its price, the SanDisk Sansa e260 is a good bargain!

Specifications
4 GB capacity; 1.8-inch TFT LCD; microSD slot; USB 2.0; MSP/MTP functionality; audio formats: MP3, WMA, and WMA-DRM; photo formats: JPEG, PNG, GIF, BMP, and TIFF; video format: proprietary

Kaspersky Internet Security 6
Russian Fortification!

With Kaspersky Internet Security (KIS), the anti-virus pioneer now offers a complete security solution for your PC. KIS consists of the trusty anti-virus, anti-spyware, anti-spam, firewall, and a proactive defence system. It has a very simple and neat interface that lets you tweak it to your satisfaction.

The powerful file scanner is highly customisable. It skips files that have remained unchanged since the last scan, speeding up scanning.

The e-mail scanner supports most popular POP3 and IMAP e-mail clients. E-mail scanning is excellent, and in our test, it eliminated all suspicious attachments. The anti-spam feature is also good; identification of false positives can be reduced to a great extent by training the spam filter.

Anti-hacker, the firewall, blocks attacking IPs and bans the address for a certain period of time. Anti-Hacker puts all system ports into stealth mode, in effect making the PC invisible to the outside world.

Virus definitions are updated very fast, almost once every hour. KIS is light on system resources, except when certain applications try to access the Net. A one-year license costs $59.95 (Rs 2,850) and has a "No risk, no questions asked" money-back guarantee.

Contact: **Kaspersky Lab**
Web site: **www.kaspersky.com**
Price: **$59.95 (Rs 2850) for a year**

RATINGS	
Performance	★★★★⯪
Features	★★★★⯪
Ease of use	★★★★⯪
Value for money	★★★⯪◯
Overall	★★★★◯

Perfect Keyboard PRO
Now, Program Your Keyboard!
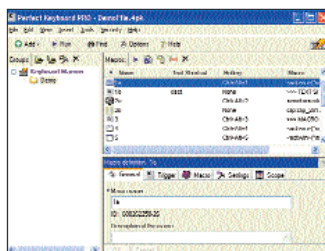
Bored of typing the same phrases again and again? Why not let the computer take care of repetitive things like these? Perfect Keyboard is a great time-saving Windows utility. The program allows you to create a file of frequently used phrases, paragraphs, e-mail addresses, macros, scripts, etc. and use them in applications by just typing in short abbreviations. You can even configure hotkeys to do the job.

Perfect Keyboard supports recording macros, and thanks to the easy-to-use Wizards and visual editing tools, you can create macros without any programming skills. Using its scripting language, this program gives you access to even more powerful features—insert time and date, activate a window, launch applications, manage files and directories, work with the clipboard, download files, format text and more.

You can use it for filling forms automatically, using macros for HTML constructions, launching multiple programs from a hotkey, automate e-mail correspondence, e-mail taglines, customer support phrases—the possibilities are endless.

The 30-day trial of Perfect Keyboard PRO is on this month's Utilities CD, and can be bought for $29.95 (Rs 1,400), while the LITE version is available for $19.95 (Rs 950). For programming geeks, there is an Advanced Scripting Edition of the software, available at a steep price of $75.95 (Rs 3,600).

Contact: **Pitrinec Software**
Web site: **www.pitrinec.com**
Price: **$29.95 (Rs 1,400) (PRO version)**

RATINGS	
Performance	★★★★◯
Features	★★★★⯪
Ease of use	★★★★◯
Value for money	★★★⯪◯
Overall	★★★★◯

Acronis True Image Home 10.0
Your Lifeline In A PC Crash

This is a disk imaging backup software that lets you create an image of your hard drive, including the OS, applications, user settings, and all other data. If your PC fails to boot after a crash, you can use this image to revive it to a working state without reinstalling Windows. You can easily restore data even if you accidentally delete it.

True Image is not just any other imaging backup solution. In addition to a complete system restore, it can restore individual files and folders in a matter of minutes. True Image can create backups on almost any storage device—local hard drives, network drives and removable media drives, as well as CD-R/RW, DVD-R/RW, DVD+R/RW, magneto-optical, and Iomega Zip and Jaz drives.

The Acronis Secure Zone is a special partition on the hard drive where images can be saved. This is completely invisible to the operating system and all applications. You also have the option to choose a backup mode from full, incremental and differential. Backup to FTP is another convenient feature for travellers, since they can access their backup archives from any location where an Internet connection is available. The Windows application backup lets you roll back after an unsuccessful application setup, and you can also search for files in the image archive just like in Windows Explorer. Buy it for a steal at $49.99 (Rs 2400) and kiss your data worries good-bye!

Contact: **Acronis, Inc.**
Web site: **www.acronis.com**
Price: **$49.99 (Rs 2400)**

RATINGS	
Performance	★★★★⯪
Features	★★★★⯪
Build Quality	★★★★⯪
Value for money	★★★★◯
Overall	★★★★⯪

Tips & Tricks

WINDOWS XP

Illustrations **Harsho Mohan Chattoraj**

No matter how much we deconstruct it, there's so much to Windows that we haven't let discovered. This month: random tips to (what else) enhance your experience, and how you can use Registry hacks without actually using the Registry.

Pretty Folder Pictures

We all know that images within a folder show up in the thumbnail view of the folder, but what if you want only one of these images to show up? Just rename this image to folder.jpg (folder.gif works too)! Even better, if you do this for your music collection, Windows Media Player will load this image as album cover art if you've disabled visualisations.

No More Admin Shares

By default, Windows shares your all drives (C: shared as C$, D: as D$ and so on) so that you can access them over the network using your administrator password. However, if you're the paranoid kind or need to share your admin password with your colleagues from time to time, you might want to turn this off. You can do this using the Sharing tab under the drive's properties, but the shares are enabled again after you restart. For the permanent solutions, open the Registry Editor (**Start > Run > "regedit" > [Enter]**) and navigate to HKEY_
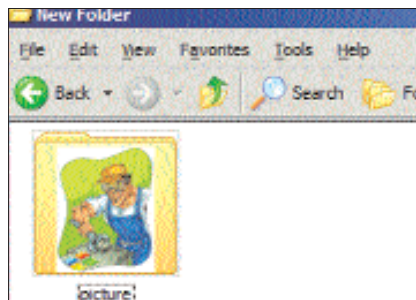
Give folders a thumbnail

LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanManServer\Parameters. Right-click in the right-hand pane and select **New > DWORD value**. Call this DWORD "AutoShareWks", and assign it a value of 0 (which it should be by default). Restart your PC for the change to take effect.

Remove The Shared Documents

Hate the "Shared Documents" icon at the top of your My Computer window? Instead of trying to figure out why this bizarre "feature" was needed, here's how you can be rid of it: open the Registry Editor (**Start > Run > "regedit" > [Enter]**), go to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\My Computer\NameSpace\DelegateFolders, and delete the sub-key (it looks like a folder) called {59031a47-3f72-44a7-89c5-5595fe6b30ee}. You should see the effect immediately.
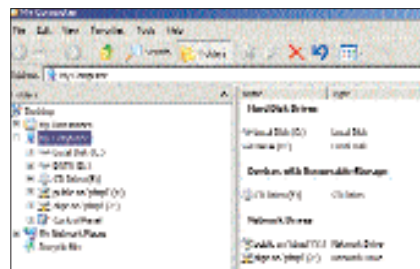
My Computer, as it should be

Track Down Naughty Drivers

While you rarely see a BSOD with Windows XP, the few times they do crop up are usually due to misbehaving drivers. To see which of these (if any) is causing your problems, use XP's unsung Driver Verifier (**Start > Run > "verifier" > [Enter]**). In the first screen, select Create Standard Settings and move ahead to select which drivers to verify. Once
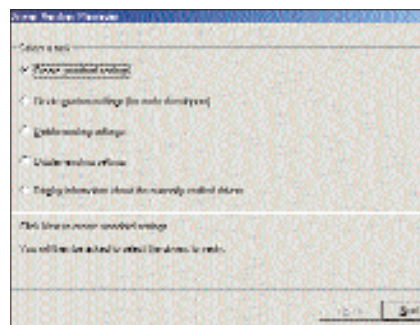
The Driver Verifier identifies broken drivers

you've done that, you'll need to reboot to let the Verifier do its job. If a driver is indeed your problem, then you'll get a blue screen during the booting process which will tell you which driver it is. If your PC boots fine, then your problems lie elsewhere.

To reset the verifier, do **Start > Run > verifier /reset > [Enter]**.

Share Folders With Ease

If you've got a large number of folders you want to share on the network, navigating to each one of them and going

into their properties and changing them one by one can be quite a nuisance. Even sharing can be as simple as "Next, next, and next" with the Shared Folder Wizard (**Start > Run > "shrpubw" > [Enter]**).

You can even set share permissions right there, so there's no need to go back to those shared folders for additional settings. Just remember to check the "Run this wizard again" box at the last dialog if you want to move on to the next folder.
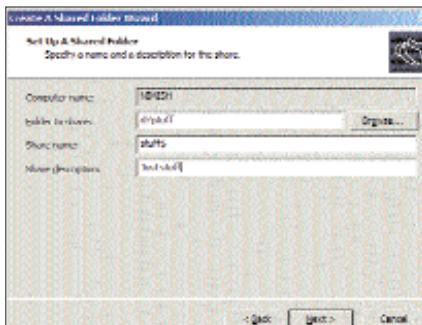
Use the Sharing Wizard to share many folders

Speed Up With A USB Stick

If you've got yourself a large USB Flash drive (at least 1 GB, preferably 2), you can move your system's page file onto it for significantly better performance, because accessing flash memory is typically faster than your average hard disk.

You should also optimise the Flash drive for performance—right-click on it in My Computer, select Properties. Go to the Hardware tab, select your Flash drive and click Properties. Under the Policies tab, select "Optimise for performance".

A couple of caveats: Firstly, if you remove this drive while Windows is running, you could cause it to crash, so be careful there. Secondly, Flash drives are good only for limited read/write cycles, so this approach is definitely going to eat into its lifetime. Use this tip only for when you really need the performance boost rather than as a permanent solution.

Bad Doggie!

The Microsoft obsession with annoying animated characters didn't end with the demise of Clippy—here's how you can get rid of the animated dog that turns up every time you want to search for files.

In the search window, click **Change Preferences > Without an animated screen character**.

Furthermore, to get back the Windows 2000-style search window, go to **Change Preferences > Change files and folders search behaviour** and select Advanced. Finally—sensible search.

Tune ClearType

With XP, Microsoft introduced ClearType, which improves the quality of fonts displayed on your screen, especially if you're using an LCD monitor. However, the results on CRT monitors were a tad disappointing. However, with a little fine-tuning, you can get satisfactory results too. Just visit **www.microsoft.com/typography/cleartype/tuner/Step1.aspx** using Internet Explorer to start up the ClearType Tuner. The site will ask you if you want to download the ActiveX control. Accept it and go through the necessary steps to get the best ClearType setting for you. Alternatively, you could get the ClearType Tuner powetoy here: **www.microsoft.com/typography/ClearTypePowerToy.mspx**

Trash Files With Crowded Desktops

If you want to drag a file to the Recycle Bin, but have too many windows open, just drag the file to an empty area on the taskbar—the windows will all minimise, giving you free and uninterrupted access to the Recycle bin!

Start > Run Shortcuts

Use these shortcuts in **Start > Run** to get to your configuration tools faster in Windows XP Professional:

|	
compmgmt.msc	Computer management console
devmgmt.msc	Device manager
diskmgmt.msc	Disk management
dfrg.msc	Disk defragmenter
fsmgmt.msc	Shared folders
gpedit.msc	Group policy editor
lusrmgr.msc	Local users and groups
perfmon.msc	Performance monitor
secpol.msc	Local security settings
services.msc	Manage services

AVOID THE REGISTRY

You don't really need the Registry Editor or third-party tools for every single tweak you want to make to Windows. If you're using XP Professional (sorry, Home Edition users), the Group Policy Editor (**Start > Run > gpedit.msc > [Enter]**) hides an obscene number of settings that you can use to control your PC. If you're a domain administrator, these settings affect all users under your domain. Here are some of its finest:
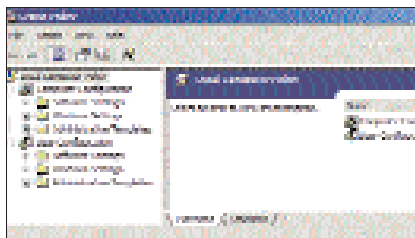
The mother of all configuration tools

Customise IE's Look

You'll find these settings under **User Configuration > Windows Settings > Internet Explorer Maintenance > Browser User Interface**. Here you can add your own title to the IE title bar, change the icon on the top-right corner and even add your own custom toolbar buttons!

Changing the IE title text is just one of the settings you can customise

Clear The Page File On Shutdown

This setting may or may not improve your system's performance (it depends on your usage patterns), but it does provide relief to the paranoid. Your Windows swap file may contain unencrypted text, including passwords, that could be exploited by interested parties. To delete the file when you shut down your system, you'll find a setting under **Computer Configuration > Windows Settings > Security Settings > Local Policies > Security Options** called "Shutdown: Clear virtual memory pagefile". Double-click this, select Enabled and click OK. Your shutdown time will increase marginally, though.

No More Windows CD

To avoid the hassle of hunting down your Windows XP CD every time you want to restore a system file (Windows File Protection at work) or add and remove components, just copy the entire thing to your disk and modify a setting in the Group Policy Editor. Navigate to **Computer Configuration > Administrative Templates > System**. On the right-hand pane, you'll find "Specify Windows installation file location". Double-click this, select Enable, and enter the path to your Windows XP setup file. You can even point it to a network path on your office LAN, so you don't have to run to your system admin every time Windows wants the installation CD.

Disable Windows Key Shortcuts

If (for whatever reason) you want to prevent users from using shortcuts like [**Windows**] + [**E**] and so on, navigate to **User Configuration > Administrative Templates > Windows Components > Windows Explorer** and enable the "Turn off Windows + X hotkeys" setting.

No More System Tray

You'll find this setting under **User Configuration > Administrative Templates > Start Menu and Taskbar**. Double-click "Hide the Notification Area"

and choose Enabled. When you log on next, you'll only see the system clock in the tray, which you can also remove by right-clicking on the Taskbar, selecting Properties and un-checking "Show the Clock".

Select Control Panel Applets

You can choose to show only a given set of Control Panel applets to users. The option is under **User Configuration > Administrative Templates > Control Panel**. On the

You can decide which Control Panel icons you want users to see

right-hand side, you will see "Show only specified Control Panel applets". You'll need to know the exact names of the Control Panel applets to use this, though. For example, appwiz.cpl corresponds to Add/Remove Programs and so on.

Get Rid Of The Update Nag

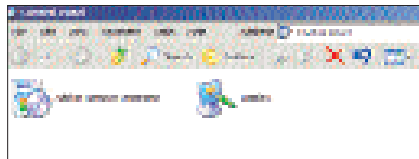Aren't you frustrated by the number of times Windows asks you if you want to restart after an update? It won't even listen if you tell it to restart later! Here's how you can get rid of that.

In group policy, you'll find this blissful setting under **Local Computer Policy > Computer Configuration > Administrative Templates > Windows Components > Windows Update > Re-prompt for restart with scheduled installations**. Done! Now all you have is an icon in the system tray to remind you in the unobrtusive way that it should have in the first place. ∎

Bet You Didn't Know

The Office 2003 Line Irritant

If you enter a series of hyphens or underscores in Word (2003 or 2007) and hit **[Enter]**, it autocorrects to a line that covers the full width of the page. This is all very nice, but what about when you want to get rid of that line? Unlike Office XP, you *can't* just hit delete and be rid of it! The line is created as a border, so the solution is to go to the borders button on your toolbar and choose "No Border" (that's the box with all its lines dotted).

MEDIA PLAYERS

We're all obsessive about our music and movie collections, and ergo, about our media players. Here are some handy guidelines to use your favourite programs better.

WINAMP

Use The Global Hotkeys

For some reason, this feature has been disabled by default, but it's extremely useful if you're listening to music while working on another program and don't want to bother yourself switching to Winamp to change the song you're hearing. Go to **Options > Preferences** (or [Ctrl] + [P]) > **Global Hotkeys** and check Enable. All the hotkeys are simple [Ctrl] + [Alt] shortcuts that work even when Winamp isn't in focus. You can even add your own and customise what exists—which you might need to because volume controls sometimes don't register with Windows XP.

Don't Read ID3s All At Once

By default, Winamp will load a song's information as soon as it's queued into the playlist. If you've loaded a large number of files, though,

you might want to reduce the time between Winamp starting up and your music actually playing. Go to **Options > Preferences > Titles** (under General Preferences) and select "Read metadata only when files are played".

Really Random Music

One quirk with Winamp is that when using the Shuffle feature, you might wind up listening to the same set of songs over and over again—we've seen situations where out of 500 songs in a playlist, only 200 were played often, and the rest rarely. This is actually expected behaviour, since shuffling doesn't necessarily mean that songs won't be repeated. You can tweak the Shuffle Morph Rate in the preferences (**Options > Preferences > General Preferences > Playlist**), but if the results don't satisfy you, turn off the shuffle feature and instead, click on Misc. in the playlist editor and select **Sort > Randomize List** for a truly random playlist.

Magic With Music

If you're having one of those days when you need to hear only slow, depressing songs, or if you're having a party and don't want any of the aforementioned songs getting in your way, use the MusicMagic plugin that comes bundled with Winamp. It analyses your music and relates tracks according to their "acoustic fingerprint", so similar-sounding tracks fall under the same playlist. You can access it from the Media Library (it's the second entry from the bottom) and change its settings under **Options > Preferences > Media Library > Predixis MusicMagic**.

Don't Load Your Old CPU

If you've experienced choppy sound from Winamp while you worked on Word or Excel, especially on older PCs, Winamp might be taxing your CPU
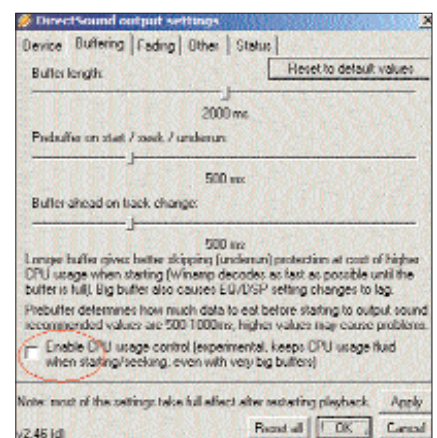
Prevent Winamp from embarrassing your old PC

Master Nero Recode 2

Authoring your own DVD is easier than you think!

Jayesh Limaye

Burning a DVD or a CD today means using Nero—the simple user interface and powerful features have made it the *de facto* burning software. Most of us use Nero regularly, but in addition to the burning program, Nero bundles lots of useful goodies. One of these is Nero Recode 2.
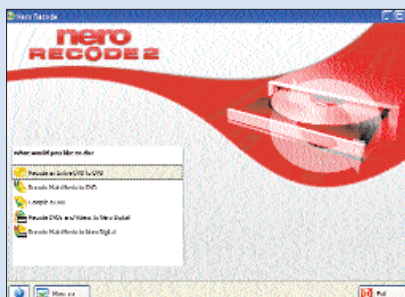
The Nero Recode 2 main window

Nero Recode 2 is a tool that can be used to copy, compile, and convert to and from DVDs that aren't copy-protected. You can launch it from Start > All Programs > Nero 7 Premium > Photo and Video > Nero Recode. In the main window, you will see five tasks:

- Recode an Entire DVD to DVD
- Recode Main Movie to DVD
- Remake a DVD
- Recode DVDs and Videos to Nero Digital
- Recode Main Movie to Nero Digital

Click on "Recode an Entire DVD" to DVD to copy the entire DVD. The DVD-Video area of the backup window for your DVDs will now open.
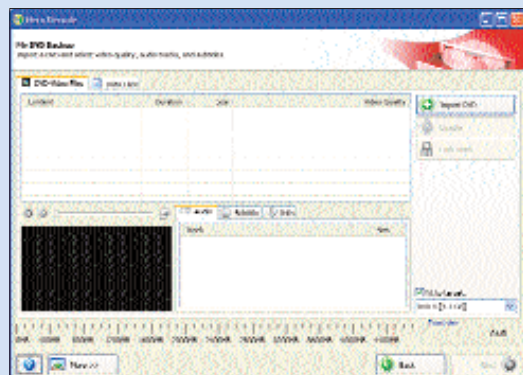
Recoding an Entire DVD to DVD

Copying DVDs To DVDs

Click "Import DVD" to open the dialog to import the selected DVD or files onto the hard drive. You can use the Enable and Disable buttons to include or exclude parts of the title (such as extras) from the compilation. You can even enable or disable parts of the main movie or extras. In order to maintain the menu structure and compatibility of the recoded DVD, something else needs to take the place of the part that has been deleted. Use the drop-down to select the substitute—you can choose from among Custom Picture, Slide Show (where you can view a slide-show of stills from the deleted video) or Custom Color.
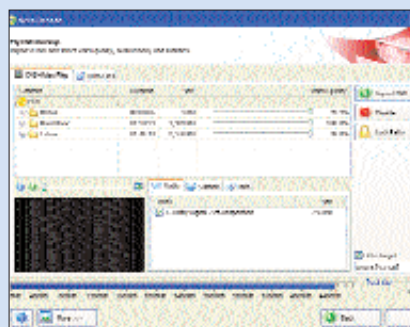
Recode an Entire DVD to DVD

Tweak The DVD Compilation

Click on "Lock Ratio" to stop the recording quality of a DVD title from being changed automatically. However, you can still change the quality manually by moving the slider. Click "Unlock Ratio" to let Recode automatically modify the video quality. The "Fit to Target" check box is checked by default—this means that the disc inserted will be automatically recoded to fit the size of the blank disk inserted (where possible). If "Fit to Target" has been checked, you can select the target from the dropdown—the choices available are 8 cm DVD (1.4 GB), DVD-5 (4.7 GB), DVD-9 (8.5 GB), and Custom. The level indicator will be adjusted depending on the target. When the box is disabled, the size of a copy can be specified independently of the disc's size limitations.

Click on an item in the list and click on Play to preview the video. In the Audio area, you can select which audio track you want in the output—many DVDs have 2.1 as well as 5.1 channel sound tracks; some even have multiple-language audio tracks. Here you can choose the sound track of the format and language suitable for you. The Subtitles area works the same way. At the bottom of the page is the space indicator that lets you keep check on the size of the DVD. You should not allow the indicator to enter the red region.

Add Useful Data To The DVD

Click on "DVD Data Files" to move to the Nero Recode 2 data area. You can add data to the DVD here. Unlike the video area, you only have a window that shows the list of files. With "Recode Main Movie to DVD", you can import and recode the main movie of a personal, non-copy-protected DVD to another DVD, keeping the video quality intact. Here too, you can remove unwanted subtitles and audio tracks, and also trim the video.

Create Nero Digital a.k.a. MPEG-4 Content

"Recode DVDs and Videos to Nero Digital" allows you to convert content from one or several personal, non-copy-protected DVDs to Nero Digital or MPEG-4 files. The process is similar to creating a DVD video, with the difference that you can choose from among different Nero Digital categories such as Nero Digital, Nero Digital AVC, Sony Memory Stick Video, and Apple iPod. Under Nero Digital Profile, you can select Mobile, Portable, Standard, Cinema, and HDTV—their purpose is self-explanatory. You can also trim the video to remove unwanted portions. What's more, you can also create chapters by clicking on the Chapter button to give your DVD a more professional feel.

After you click on Next, you are provided with the option to either create the recoded files on the hard drive, burn to a CD/DVD-RW, or create an image file. You can also tweak the quality settings in Nero Digital Settings, but it's better to leave these alone unless you know exactly what you're doing. ■

jayesh_limaye@thinkdigit.com

too much. A possible cure (it's in the experimental stage) is **Options > Preferences > Plugins > Output > DirectSound output**. Select the plugin, click Configure, and under the Buffering tab, tick "Enable CPU usage control".

Make It Sound Better

Winamp sounds decent as is, but for better quality, you might want to try a couple of third-party plugins to both decode audio as well as enhance it. You'll find Enhancer 017, a free DSP plugin that, well, enhances your audio

The Enhancer plugin greatly improves the quality of your audio

here: **www.winamp.com/plugins/details.php?id=81361**. This is undoubtedly the best DSP plugin you can get for Winamp, and fans have gone so far as to say that it makes even your onboard audio card sound like a Creative X-Fi (an exaggeration, we're sure).

Another thing you might want to try is to change your input plugin from DirectSound to waveOut. Do this under **Preferences > Plugins > Output**. The waveOut plugin is dated, but it offers better quality on some sound cards. You could also try a different decoder altogether—the MAD MP3 decoder (**www.mars.org/home/rob/proj/mpeg/mad-plugin/**), for example.

WINDOWS MEDIA PLAYER 11

Better Searching

Searching your large (and no doubt ever-growing) media library can be as easy as using Google, thanks to WMP

11's search modifiers. For example, you can use "who are you artist: The Who" to search only those tracks sung by The Who. The full list of search modifiers is here, though we wonder who'd be searching for songs by their release date, or by whether it's DRMed or not. In addition to these, you can use operators like AND, OR and NOT to refine searches. For example, "Pink Floyd NOT Album: The Wall" will get you all tracks for Pink Floyd except those from the album The Wall.

Search	Search Modifier
Album Name	Album:
Performing Artist	Artist:
Genre	Genre:
Song title	Title:
Album artist	AlbumArtist:
Music composer	Composer:
Orchestra Conductor	Conductor:
Contributing artist	ContributingArtist:
Album release date	DateReleased:
Length of track in seconds	Length:
DRM Protection	Protected:
Your 1-5 Star Rating	Rating:
Content Provider	ContentProvider:

Make The Toolbar Notification Fade Out Faster

When you've got WMP running in the toolbar mode, a notification fades in every time you hover the mouse over the toolbar, and then fades out when you move the mouse away. To control the time it takes to fade out, you need to create a Registry DWORD called DeskbandFlyoutTimeout in HKEY_CURRENT_USER\Software\Microsoft\MediaPlayer\Preferences. Set it to 0x0 to stop this deskband from ever appearing, 0xFFFFFFFF to keep it forever, or any value in milliseconds that you wish.

Remember The Song

One of the smarter things about Winamp is that it remembers which playlist and song you were playing when you quit, so the next time you start, all you have to do is push play to resume your playlist where you left it. To duplicate this in WMP, all you need to do is ensure that "Save file and URL history in the player" under **Tools > Options > Privacy** (right-click on the title bar to get to the main menu) is checked.

Rate While You Listen

To rate songs that are currently playing in Windows Media Player, use [Ctrl] + [Windows] + [0—5], depending on what you want to rate it]. This nifty little feature works even when WMP isn't the active window, so you don't need to babysit the player if you want to rate your tracks.

Command Line Options For WMP

These are quick ways to get things done from within **Start > Run** itself.
Start WMP with a playlist:
wmplayer /Playlist [playlist name]
Play a song or video:
wmplayer "[filename]"
(add **/fullscreen** if you want it to play in the full screen mode)
Play a DVD:
wmplayer /device:DVD
(add **/fullscreen** if you wish to)
Play a song or video with a certain skin:
wmplayer "[filename]"?wmpskin=[skin name]"
Open WMP in the Copy From CD Mode:
wmplayer /Task CDAudio

Getting to grips with the new interface

If you've spent a lot of time with Windows Media Player 10, version 11's minimalistic interface can catch you off-guard for a while—especially the lack of the classic menus. While you *can* enable them by right-clicking the title bar, here's how the new interface is organised—you'll notice that it's more intuitive than it seems.
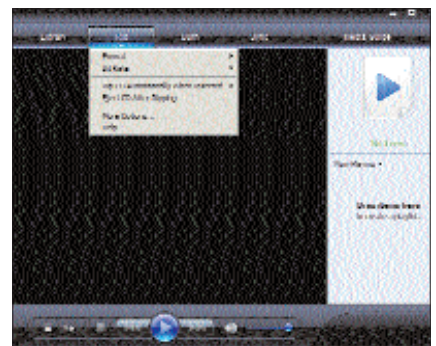
Right- click on a tab for quick access to options

When you right-click on any of the tabs (Now Playing, Library, etc.), you get a context menu relevant to the activity you would perform in that tab. Right-clicking on Rip, for example, lets you set your rip format and bit rate right there—eliminating the need to go to the classic preferences dialog to set them. You can also get this menu by clicking on the subtle down-arrow button that you see when you roll the cursor over the tab, but the right-click is so much easier.

When you want to add album art to a collection, WMP 11 is simplicity itself—just hunt down the image on the Web, copy it to the clipboard, right-click in the Album art area and choose "Paste Album Art"!

More Library Views

The Library view in WMP 11 has been simplified over its version 10 avatar, but you can get those back with

Get more views under the Library

just two clicks—in the Library view, right-click on Library in the navigation pane and select "Show More Views". Voila! More categories under the Library.

Use The Shortcuts

WMP 11's keyboard shortcuts aren't exactly the most intuitive, but they can help you get things done fast. Here they are:

Function	Shortcut
Zoom to 50%	[Alt] + [1]
Zoom at 100%	[Alt] + [2]
Zoom to 200%	[Alt] + [3]
Toggle display for full-screen video	[Alt] + [Enter]
Retrace your steps back through your most recent views in the Player	[Alt] + [Left Arrow]
Retrace your steps forward through your most recent views in the Player	[Alt] + [Right Arrow]
Switch to full-screen mode	[Ctrl] + [1]
Switch to skin mode	[Ctrl] + [2]
Turn shuffle on or off	[Ctrl] + [H]
Eject CD or DVD	[Ctrl] + [J]
In full mode, show or hide the Classic Menus (menu bar)	[Ctrl] + [M]
Create a new playlist	[Ctrl] + [N]
Open a file	[Ctrl] + [O]
Play or pause playing	[Ctrl] + [P]
Stop playing	[Ctrl] + [S]
In audio playback, turn repeat on or off	[Ctrl] + [T]
Specify a URL or path to a file	[Ctrl] + [U]
Close or stop playing a file	[Ctrl] + [W]
Rewind video	[Ctrl] + [Shift] + [B]
Turn captions and subtitles on or off	[Ctrl] + [Shift] + [C]
Fast forward through video or music	[Ctrl] + [Shift] + [F]
Use a fast play speed	[Ctrl] + [Shift] + [G]
Play at normal speed	[Ctrl] + [Shift] + [N]
Use a slow play speed	[Ctrl] + [Shift] + [S]
Return to full mode from full screen	[Esc]
Edit media information on a selected item in the library	[F2]
Add media files to the library	[F3]
Refresh information in the panes	[F5]
Mute volume	[F8]
Decrease volume	[F9]
Increase volume	[F10]

ITUNES

Playlists With Brains

One of iTunes' best yet surprisingly under-used features is the Smart Playlist, that lets you specify criteria for iTunes to build playlists—much like WMP's "Music Listened To On The Weekend" and so on. To start creating a new smart playlist, press [Ctrl] + [Alt] + [N]. You can now specify songs filtered by Artist names, when you last heard them, genre and beats pe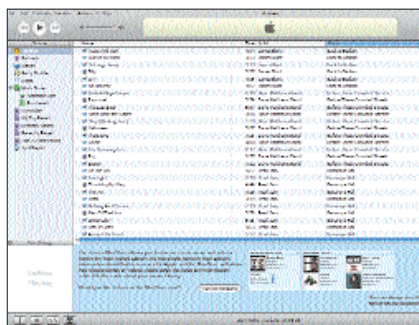r minute, to name a few. Also make sure that Live updating is selected, because this will ensure that any new songs that you add to your library will automatically be considered for the playlist.

Back Up Your Collection

With version 7, iTunes lets you easily backup your music collection—you can find its backup utility under **File > Backup To Disk**. It lets you back up your entire collection including playlists, or just backup songs that weren't backed up the last time. And as with all other iTunes features, it's simple as can be.

Keep Updating Your Library

For whatever reason, iTunes lacks the ability to monitor one or more folders for new music—perhaps Apple assumed that we'd be getting music only from the iTunes Music Store. Thankfully, using a little tool called the iTunes Library Updater (**http://itlu.ownz.ch**), you can work around this flaw. It gives you a simple GUI where you can select which folders your music is in, and automatically update your iTunes library.

You'll need the .NET Framework 2.0 for iTunes Library Updater to work; find it on this month's *Utilities* CD.

Prevent Automatic Syncing With iPod

Imagine going over to a friend's place with your iPod, connecting it to his/her computer and firing up iTunes, only to see that your 'pod's been wiped clean! This could happen if your friend's iTunes is set to automatically sync with the iPod connected to it. To avoid this, hold down [**Ctrl**] + [**Shift**] from the moment you connect your iPod to the time that it appears in iTunes. Your collection will remain safe.

No Pod, No Helper

If you don't own an iPod, it's pointless to have the iTunes services (iPodService and iTunesHelper) running in the background—disable iPodService using the services console (**Start > Run > "services.msc" > [Enter]**). Double-click on the service name, and select Disabled under Startup Type. To disable the iTunesHelper, go to **Start > Run > "msconfig" > [Enter]** and uncheck iTunesHelper under the Startup tab.

The Ultimate Boot CD Experience

One CD, lots of tools—indispensable!

Jayesh Limaye

Find on this month's *Utilities* CD the Ultimate Boot CD (UBCD) from **www.ultimatebootcd.com**. This is a bootable CD based on Linux. It contains a host of precious tools and utilities which everyone in general and computer hardware professionals in particular will find useful—something like a doctor's first-aid kit!

UBCD contains tools that let you service and maintain your computer: tools that let you diagnose computer problems, and tools that let you repair them. You can boot from this CD even if you aren't able to boot from your computer due to a hard drive failure—you can then run diagnostic programs to
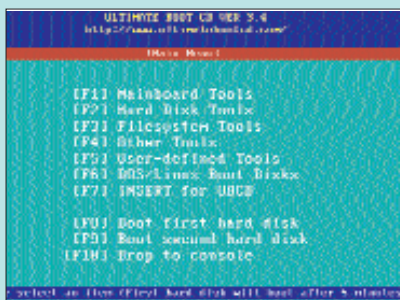
The UBCD welcome screen

check the disk.

Burn the UBCD image on the *Utilities* CD to CD, then set the affected computer to boot from the CD. Insert the UBCD into the drive, and you'll be booting via UBCD. Keep in mind that you'll need a hard drive with a larger capacity than the amount of data to be recovered. In the main menu, you'll see many options such as Mainboard Tools, Hard Disk Tools, Filesystem Tools, Other Tools, DOS/Linux Boot Disks, INSERT for UBCD, and more. Each option is preceded by a function key, which is the hotkey to launch that particular option. There are many utilities, so we'll mention a few to get you started.

Mainboard Tools

Pressing [**F1**] will take you to the Mainboard tools. There are DOS-based (as is the case with most of the utilities on UBCD) diagnostic and benchmark tools that provide you information about the various components of the motherboard, CPU, memory, peripherals, and so forth.

Notable are utilities such as !BIOS, CMO-SPWD, and WipeCMOS. The latter can reset the CMOS password if you forget it and get locked out!

Hard Disk Tools

Press [**F2**] to enter Hard Disk Tools. You'll be able to view diagnostic tools for various hard drive brands. Press the right arrow key twice to go to the third page of

The Salvation HDD Scan & Repair tool

Hard Disk Tools. Here, under the "Others" section, you will be able to view Salvation HDD Scan & Repair V3.0. This tool lets you recover a failed hard drive. It is a generic tool, so it works with all hard drive brands. Press [**F4**] to launch the application. Default Scan will scan the entire hard drive for recoverable data. This would be the option most users select. Advanced Scan is for experts; here, one can choose the starting point as well as the end point (in percentage) for the scan.

Filesystem Tools

Here, you can find many disk partitioning utilities, boot managers, File Tools, and NTFS tools. Notable is Ranish Partition Manager, a very easy-to-use menu-driven disk partitioning utility. There are a host of utilities under File Tools, which let you browse the con-
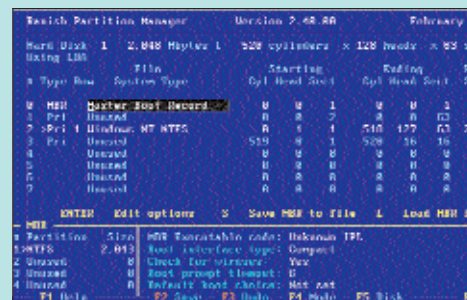
The Ranish Partition Manager

tents of the hard drive in DOS mode. System administrators and computer service professionals will be delighted to find the offline NT Password & Registry Editor, which lets one recover passwords for Windows systems such as 2000 and XP. You can even edit the Registry from outside Windows. Active NTFS Reader and NTFS4DOS lets you view the contents of NTFS drives, something not possible using regular DOS boot disks.

Other Tools

If your hard drive is infected by a virus, you can choose from amongst F-Prot, McAfee, AVG, and Avast! to fix your problem. Similarly, there are network related utilities and browsers, most of which are beyond the scope of utility of the home user.

▶ DOS / Linux Boot Disks

There are four DOS boot disks and four for Linux, all crammed with utilities. A boot disk simulates booting from a floppy using the floppy's image on the UBCD.
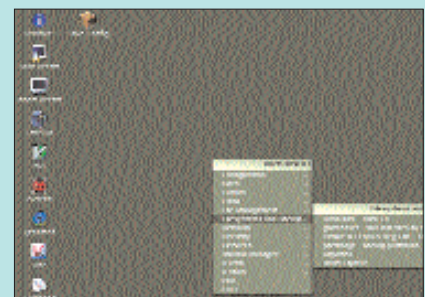
INSERT for UBCD

▶ "INSERT" for UBCD

If your hard drive does not boot and you're not comfortable with the DOS screen, you can boot into INSERT, a version of Linux that runs off the UBCD. It has many cool utilities, and it sports a GUI. You can use it to diagnose problems and also repair them.

That's Not All!

UBCD is customisable. You can add your own programs to make it more interesting and useful—for example, you can add your own floppy images. Find more information about this at www.ultimatebootcd.com/customize.html. ■

jayesh_limaye@thinkdigit.com

Controlling The Visualisations

You can turn on the iTunes visualisations using [**Ctrl**] + [**T**], but to control the effects themselves, you need these shortcuts:
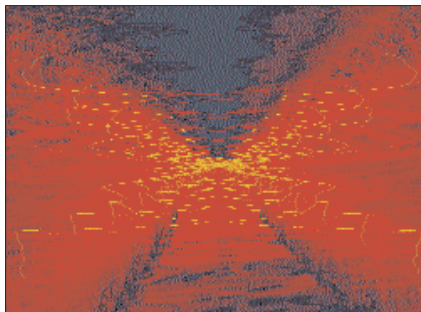
Control the visualiser with simple shortcuts

C	Show current effect information
Q, W	Cycle through shapes
A, S	Cycle through effects
Z, X	Cycle through colour schemes
Shift + 0-9	Save current effect combination
0-9	Access these effect combinations
R	Random effect
M	Toggles between:User config slideshow mode—Cycle through your saved effectsFreeze current config— Keep showing the current effectRandom Slideshow—Go back to random visualisations
F	Toggle the frame-rate display
I	Toggle track information
D	Reset to the default visualisation

VLC MEDIA PLAYER
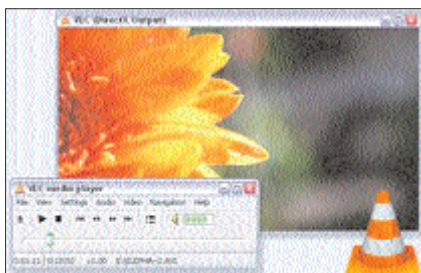
VLC is an incredible tool for not just playing video without codecs, but streaming it too

Broadcast!

If you've set up a home network or office LAN and want to broadcast a video to everyone on the network, simply use the streaming wizard (**File > Wizard** or [**Ctrl**] + [**W**]), and choose HTTP when asked how the stream will be sent. Users

on your network can now open this stream in VLC by typing in **http://your.ip.address:8080** in **File > Open Network Stream**.

Oft-Used Shortcuts

VLC's shortcuts are among the easiest of all media players, and they're fully customisable. You will find them under **Settings > Preferences > Interface > Hotkeys** settings. Here's a list of the ones you'll be using most often:

|	
F	Fullscreen view
Spacebar	Play/Pause
S	Stop
Ctrl + Q	Quit
+/-	Play clip Faster/Slower
N / P	Next/Previous clip in playlist
Shift + Left / Shift + Right	Jump very short (backwards or forwards)
Alt + Left / Alt + Right	Jump short
Ctrl + Left / Ctrl + Right	Jump medium
Ctrl+Alt+Left/ Ctrl+Alt+Right	Jump long
Ctrl+Up/ Ctrl+Down	Increase/Decrease volume
M	Mute
Ctrl+M	Show DVD menu
Left/RightUp/ DownEnter	DVD menu navigation

Fiddle With Video Settings

If you want to tweak the way your videos look or sound in VLC, use the Extended GUI ([**Ctrl**] + [**G**]) to view a plethora of settings you can change— hue, saturation, brightness, as well as an equaliser for audio settings.
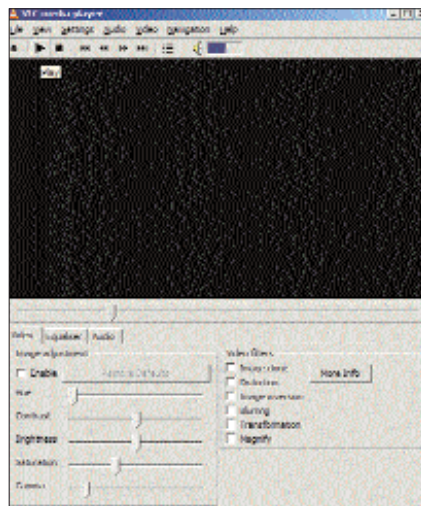
Use VLC's extended GUI to adjust and correct your video's quality

Mouse Gestures In VLC

You can use mouse gestures in VLC as well. First enable the Mouse Gestures interface by selecting **Settings > Add**

Interface > Mouse Gestures. Once you've done this, use the following gestures to control VLC (you need to hold down the right mouse button when using these):
Right: play the next item in the playlist
Up-Right: Go fullscreen
Down-Right: Quit

If you'd like the Mouse Gestures interface to be enabled every time you start VLC, go to **Settings > Preferences > Interfaces > Control Interfaces** and check "Mouse gestures control interface".

Just Hit Delete

VLC is very forgiving when it comes to its own faults—if you ever experience any problems with it, just go ahead and delete the configuration file. Really!

You'll find this file under C:\ Documents and Settings\{your username}\Application Data\vlc. Delete the file called "vlcrc", and your woes with VLC will most likely end. The next time VLC starts up, it'll create a new configuration file with all the standard settings.

The Web Interface

VLC has an extremely customisable interface, and gives you a whole lot of options to view it just the way you want to. The default interface is called wxWidgets. You can switch to the skinnable interface (called Skins 2) by going to Settings > Switch Interface.

The really cool part is the HTTP interface—enable it by going to **Settings > Preferences > Interface > Main Interfaces** and checking "HTTP Remote Control Interface". This lets you control VLC through a browser, using the URL
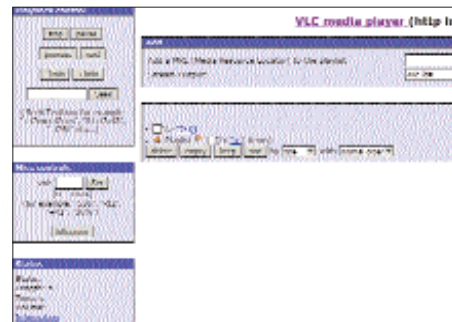
Use the Web Interface to control VLC over the network

http://[your IP address]:8080. Logging into the Web interface takes you to index.html, which you can use to play music and have access to your playlists. Go to info.html to get information about the server (the PC you're connected to), and type in /admin to get to the administration control pages. The default username/password for this folder is admin/admin. ∎

Q&A

Draft As Default

Q I do most of my printing at the Draft setting. But it's a bother to have to change it to that every time. Is there a way for the default print setting to be Draft instead of Normal?

Mahesh Wankhede

A This is simple. Just open Printers and Faxes from the Control Panel. Select your default printer and choose "Set printer properties" or something like that. The exact steps will depend on what printer you have, but you need to land at Printing Preferences. Here's where you'll find the box where you always select Draft mode. Select it and click OK twice to close the settings dialog box. Draft is now the default!

Through The Looking Glass

Q The names of the icons on my desktop have a background colour. This destroys the appeal of my wallpaper! How can I get them to be transparent?

Ankit Patel

A There is a sort of hidden setting in XP that controls whether the icon labels on the desktop have a drop-shadow with a transparent background or are text laid out on the system background colour. Here's what you need to do in order to make the icon labels transparent: right-click My Computer and choose Properties. Click the Advanced tab, and click the Settings button in the panel labelled Performance. Click the Visual Effects tab in the Performance dialog. Check the box titled "Use drop shadows for icon labels on the desktop". Click OK twice, and your wallpaper is beautiful again!

Cam-To-DVD?

Q I've been trying to convert analogue video-tapes to digital format, as files on my computer, using my analogue 8mm video camera and a capture device. I'm using MyDVD; the video is fine, but there's no audio. What cable connections and software would I need to get the audio as well? I intend to convert the 8mm tapes to DVDs. Going straight from my camera to DVD would be even better!

Solomon Verghese

A If all you want to do is convert tape to DVD, it's simpler than putting the video onto your PC and then converting. For example, you could use the Sony DVDirect VRDMC1. Plug your camcorder or VCR directly into DVDirect, which will burn a CD or DVD from the feed, including the audio. The device supports both analogue video and audio connections, as well as FireWire.

Don't Do The Math

Q Does a 64-bit processor require twice as much memory as a 32-bit processor because of the increased word length?

Anirudh Sathe

A No! The amount of memory you can use is limited by the motherboard and/or the memory controller rather than the processor itself. One more thing that affects the amount of memory is the operating system. The 32-bit version of Windows XP can support a maximum of 4 GB of RAM with up to 2 GB of dedicated memory per process, whereas 64-bit operating systems can address up to 128 GB. In case it interests you, the benefits of 64-bit vs. 32-bit, span across all types of memory, including 16 TB of virtual memory vs. 4 GB, 1 TB of cache vs. 1 GB and support for a page file of up to 512 TB vs. 16 TB.

Die A Dodo's Death!

Q I have Windows XP on my computer. A certain program launches itself automatically. I am unable to stop it from running—even if I run the Task Manager and kill the program from there, it starts again all by itself. I can't even delete the .exe file—it re-spawns!

Mayank Rajawat
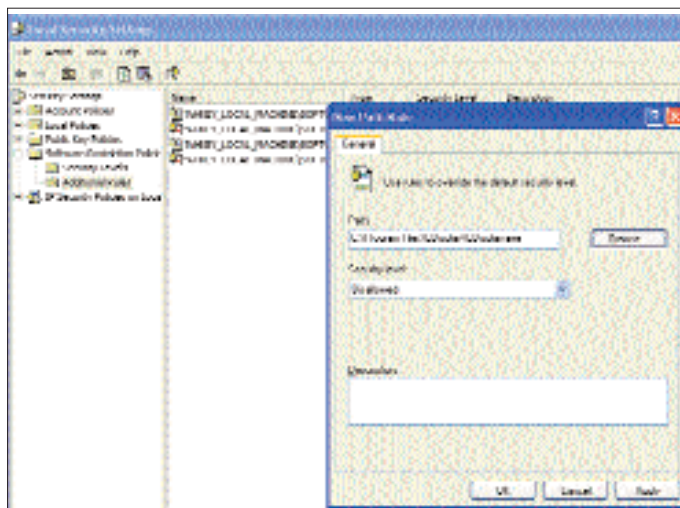
Set Software Restriction Policy using Secpol.msc

A First, you need to stop the program from launching itself at startup. To do this, go to **Start** > **Run**, type **"msconfig"** and hit [**Enter**]. Click on the Startup tab, locate the program in the list, and uncheck the box to its left. Also note the path of the program from here. Click OK and restart Windows for the change to take effect.

To prevent the program from launching itself, you have to create a new "software restric-

tion policy": go to **Start > Run**, type "**Secpol.msc**", and hit [**Enter**]. Right-click on Software Restriction Policies and select Create New Policy. Expand SRP, right-click on Addition Rules, and select "New Path Rule..." Enter the path of the menacing program and set the security level to Disallowed. Click OK. Program gone!

Alignment Angst

Q I recently replaced the ink cartridges on my HP PSC 950 MFD, and ever since, it won't copy. When I run the alignment routine from the printer's front panel, the alignment page prints, but without the checkmarks that indicate the printer passed the alignment tests. Then I get the message "Alignment Failed Please Try Again," which eventually changes to "Press Enter To Align Cartridges." I can still print from the PC, but I can't copy from the front panel.

Vilas Seth

A You can run into a problem aligning print heads on almost any inkjet printer or MFD. Fortunately, the problem is usually with the paper or cartridges, not the printer itself. A quick fix is to first skip the alignment. With the PSC 950, you can do this by holding down [**Enter**] and pressing Setup. (You can find a list of equivalent combinations for other HP models at **http://h10025.www1.hp.com/ewfrf/wc/genericDocument?cc=us&docname=bpu00657&lc=en&jumpid=reg_R1002_USEN** (or **http: //snipurl.com/qnadec1**.) Then, check the paper. If there's anything printed on the page, or if it's any colour but white, or if its brightness level—which should be indicated on the package—isn't at least 85, you can't use it for alignment.

If the problem isn't the paper, it's almost certainly the cartridges, which could be low on ink (if you replaced only one cartridge), defective, suffering from clogged nozzles, or past their shelf life. HP cartridges include a use-by date on the box. The dates tend to be conservative, but if the deadline is long since past, the cartridge could be all but useless.

Run the cartridge-cleaning routine, and then try aligning the cartridges again. If the problem was with clogged nozzles, the cleaning routine might fix it. If it doesn't, try cleaning the cartridges and the contacts in the printer. HP gives a step-by-step explanation for how to do this at **http://h10025.www1.hp.com/ewfrf/wc/genericDocument?lc=en&cc=us&jumpid=reg_R1002_USEN&dlc=en&docname=bpu02176#bpu02176_doc** (or **http://snipurl.com/qnadec2**).

Once you've cleaned the cartridges, try the alignment routine again. If it still fails, you might want to try a new set of cartridges. Or, you might want to bypass the alignment and use up the ink in the current cartridges before getting new ones.

A Picture Is Worth...

Q When I open any Web page in Internet Explorer, none of the pictures, ads or buttons are visible. All I get is an outline of where they would normally show, with three little shapes in the top-left corner of each box.

Manoj Rajput
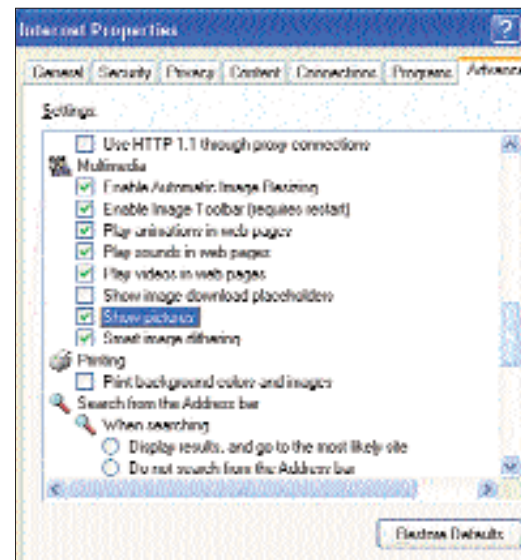
Choose to show pictures in Internet Explorer

A This problem is almost always caused after installation of buggy software. To resolve the problem, go to **Control Panel > Internet Options**. Choose the Advanced tab. Scroll down to the Multimedia section. Check the Show Pictures box. Also check the Show Image Download Placeholders box. Click OK. IE should be fine now.

We Can Work It Out

Q I upgraded my Dell Dimension 8200 from Windows 2000 to XP Pro using Dell's Windows XP Pro Upgrade CD. Now, when I power it up, it makes a sound, and the following messages appear: "Invalid boot.INI file" and "booting from C:\winnt\boot." Then it boots up. Occasionally it fails to boot, but on my second attempt, it has been booting up with the same error message. What's up?

Mani Iyer

A The boot.ini file contains information the boot loader needs, including which drive Windows has been installed on. There is also a backup of the boot.ini file, which can be used by the OS in case of a crash. The boot.ini file is just a text file. Incorrectly editing boot.ini, though, can result in an inoperable PC, so we'll tell you the easier way to get rid of the error message. You'll need to have the original Windows CD. Boot from the CD and start the Recovery Console by pressing [**R**] when asked. If you have more than one OS—for example, if you're dual-booting Windows XP 32-bit and Windows XP 64-bit—you'll be asked which one you want to recover. Pick the one you want. Then you'll see something like a DOS prompt. Type in "**bootcfg /rebuild**".

When you enter this command, you receive a message that says:

The Windows installation scan was successful.

HOW TO

Fontify Your Handwriting

Turn your scribbles into readable art!

Jayesh Limaye

Fonts may just seem a fancy at first, but when you think about it, we've all seen the impact a good font can make (and the negative impact a bad one can). Do you think you have good handwriting? If you do—or even if you don't—how cool is the idea of creating a font from it?

This can be easily achieved. Apart from Windows XP, you'll need a dark marker pen, a printer and a scanner, an image editing software, and High-Logic FontCreator from **www.high-logic.com/fcp.html**. This is a fully-functional 30-day demo. Armed with the above, we begin by...

STEP 1 Creating the template for the handwritten character set

For this, you need a piece of paper. Draw small boxes—about 2 centimetres tall by 1.5 centimetres wide on it. These will serve as the bounding boxes in which you can write. Bounding boxes are necessary because they help you to keep check on the size and consistency of the font. Use a sketch pen or a marker pen. Make sure you draw the characters well inside the boxes. The cells, as shown, should have three little openings on the left and right at the 0.8 cm, 1.3 cm and 1.7 c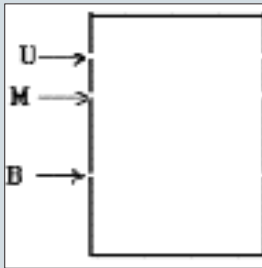m along the height from the bottom. These will serve as the guidelines for the upper-case-height (U), middle-height (M), and the baseline (B). Create such templates for all the letters.

Font Template

In addition to the alphabet, you should also create such templates for additional characters and symbols. Once you are done creating samples of your handwriting, scan the template as a greyscale bitmap at 600 dpi. Make sure you save the file in the JPEG or bitmap format with no compression.

STEP 2 Create a new font

Start FontCreator and go to **File > New**. Type in a name for the

font in the "Font family name" field, and leave the default settings for Character set and Font style. Click OK. The Glyph Overview window will open—this is a grid with sample characters. Double-click on the cell with capital "A" to bring up the Glyph Edit window. Now, go to **Tools > Import Image**. On the Image page, set Smooth Filter to Super. Sharp corners will now be rounded; if you do not want it that way, use Smooth. On the Glyph page, select the Image radio button under Bounding.
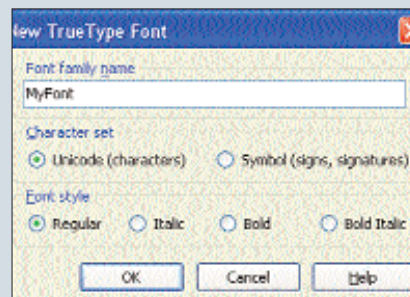
Create a new font

Under Position, select the middle radio button in the bottom row and enter 500 for the X position and -750 for Y. Then set the Size Multiplier to 6.00. Then, check the Default box and press Cancel. (The import operation will be cancelled, but the settings are saved for future use.)

STEP 3 Select the image file for upper-case "A"

Without closing FontCreator, start your image processing software and load the scanned image with your char-
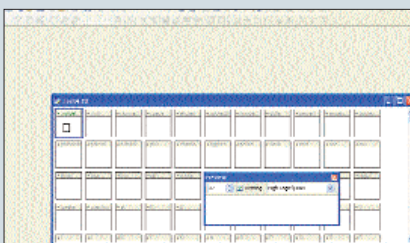
Glyph Edit Window

acter set. Zoom in as much as you can, select "A", and copy it to the clipboard.

STEP 4 Import the outlines for upper-case "A"

Paste the image into the Glyph Edit window of FontCreator. The top of the outline should be near 1400 units,

and the bottom should be on the red horizontal line (also known as the "baseline"). Also make sure the left side is close to the red vertical line. Adjust the size and placement of the contours by selecting all contours and using the mouse or the arrow keys. Drag the corner handle with the [**Shift**] key pressed to resize it proportionally. You can also drag the vertical dashed lines to their desired position and change the left and right side bearings. Position the glyph between these lines to avoid overlapping of the characters. The left side bearing should be near the red vertical line, and the right side bearing should be placed immediately after the outlines. Close the Glyph Edit window. Save the font file as a .ttf.
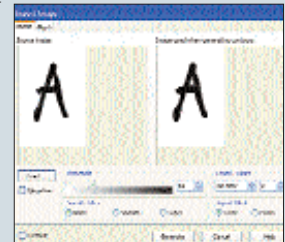
Import the image to the glyph
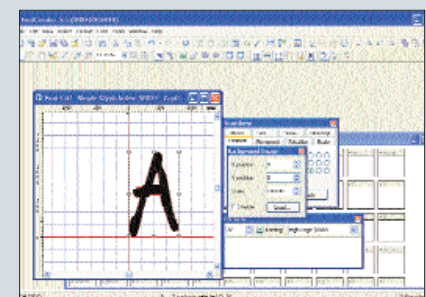
Adjust the position of the font

STEP 5 Finishing Up

Repeat the procedure for the remaining characters. After all
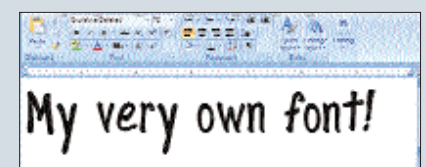
Writing in your very own font—in MS Word!

the characters have been imported, you can remove the incomplete glyphs from the font: go to **Edit > Select Incomplete** and then **Edit > Delete**. Save your font, then install it. ■

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Out Of The Blue

Q My laptop keeps restarting randomly. What could be the problem?

Bikram Rathod

A There could be many problems that can cause your laptop to restart automatically and randomly. Here are a few common problems.

Faulty battery: Most spontaneous shutdown and restarting problems on laptops are due to a faulty battery. Laptop batteries are like mobile phone batteries—they do not last forever. A heavily-used laptop, where it is often running only on battery power, will use up its battery at any stage between the first and second year of use. What is not very well known is that even if you always use your laptop from the mains rather than on battery, a faulty battery will still adversely affect your laptop's operation, from unwanted shutdowns to spontaneous restarts or freezes. Take the battery out, plug the laptop directly into the power mains, and see if you still experience spontaneous shutdowns or reboots.

Faulty power adaptor: This is not a common occurrence, but power adaptors do go faulty—either through lack of care or through wear and tear. With the battery out of the laptop, if you have a spare power adaptor from an identical laptop, see if replacing it solves the problem. Otherwise, try wiggling the cord that leads from the adaptor to the laptop and see if that stabilises the problem—if it does, then the power adaptor needs replacing.

Problem with mains power: Is the switching off or restarting happening anywhere, or only in a particular place or room?

Faulty internal cooling fan: Most laptops have one or more internal cooling fans—it is those fans which produce the quiet whirring noise you can hear when you turn your laptop on. If any of these fans stops working, the laptop may overheat and, if it does, it will automatically shut down to prevent total damage. Observe whether your laptop shuts down after near enough the same amount of time every time (with the same amount of activity while it is on—and allowing the laptop to cool down between experiments). If it does, then it is quite probable that it is shutting down because of overheating. Feel the underside of the laptop with your hand—most often, it is possible to tell that the laptop is abnormally hot. If your laptop is indeed shutting down because of lack of cooling, you need to take it to the repair store.

Note: These results are stored statically for this session. If the disk configuration changes during this session, in order to get an updated scan, you must first reboot the machine and then rescan the disks.

Total identified Windows installs: 2
[1]: C:\WINXP
Add installation to boot list? (Yes/No/All):

When you type [**Y**], and then press [**Enter**], you receive the following message:

Enter Load Identifier:

Type the description of the installation that you want displayed on the Startup menu. For example, type **"Microsoft Windows XP Professional"**, and then press [**Enter**].

You will receive the following message:

Enter OS Load Options:

Type the operating system load options that you want. For example, type "**/fastdetect**", and then press [**Enter**]. Then you can type "**/exit**" and the PC will restart.

More detail on this can be found at **http://support.microsoft.com/kb/330184/en-us**, or **http://snipurl.com/qnadec3**.

Getting Under The Hood

Q I need to change the boot device priority in the BIOS, but my computer assembler has set a password and I am unable to contact him. What can I do?

Ritesh Pendse

A If you need to get into a PC's BIOS setup that has been password-protected, you will either need to crack the password, or you will need to reset the BIOS.

Most motherboards come with a spare 2-pin jumper installed in the Off position on some connector pins on the board. Most motherboards also have "Clear CMOS" pins. If you can find a spare jumper, and your motherboard has "Clear CMOS" pins (you can verify this by either checking the manual, or by looking directly at the motherboard next to the CMOS battery), you can reset the BIOS by taking the following steps: shut down the PC and turn it off. Remove all power cables, and take the case off. Place the jumper over the two Clear CMOS pins. Plug the power cables back into the PC (still leaving the case off), turn the PC on and wait for 30 to 60 seconds (most likely nothing will switch on). Shut down the PC and remove the power cables again. Take the Clear CMOS jumper off the pins. Put the case back on the PC and plug the cables back in. Turn the PC on and you should be able to get into the BIOS.

If the CMOS battery goes dead, you lose some or all the BIOS settings and you have to install a new battery and reconfigure the BIOS. In a similar manner, often, if you remove the battery from the motherboard and leave it out for a while, this will reset the BIOS to its default state and thus enable you to get into it as a result of the BIOS password having been reset to nothing. Shut the PC down and turn it off. Remove all power cables and take the case off. Take the CMOS battery out of the battery chassis. Wait for at least two minutes and put the battery back. You should now be able to get into the BIOS.

And here's a third method! BIOS passwords are stored with very rudimentary encryption and are, as a result, very easily decryptable. As a starting point, go to **www.atwdownloads.com**, and download CMOS Password v4.6.

This nifty little utility will successfully retrieve most BIOS passwords! ∎

QUESTION OF THE MONTH

Ringing In The New

These days, you don't have to be deep-pocketed to think about a cell phone upgrade. Agent 001, ever the deal-grabber, goes looking for one to add to his possessions—with his priorities all set

My cell phone has become an extension of myself, as is doubtless the case with many of you. The Sony-Ericsson K750i I bought some months ago has become my music player, photography tool, and an e-mail device to handle the stream of mails I get every day from the lot of you.

After splurging on a new set of headphones, I still had enough dough to spend it on a new cell phone. And thus the stage was set—a new phone for me!

Audio playback was my number one priority. A digital camera is indispensable, and it became priority number two. In an age of GPRS and with 3G on the horizon, the phone should be an ideal mailing device, and hence needs good e-mail support—which also means a good keypad is needed (QWERTY is preferred). Finally, it has to look classy—something Agent 007 would use.

My first step was around the Chembur-Ghatkopar area in Mumbai—lots of small shops have spawned here. At my first stop, I was presented with a Nokia N70 and a Sony Ericsson W810i. Both have features I was looking for, sans the keyboard. While the N70 at Rs 16,500 and SE W810i at Rs 15,500 are good deals for the features on offer, both these phones are relatively old now.

On to the next shop, and I was shown a Nokia E61, E50, and a SE M600i. While the E61 is a good business phone, especially if e-mails are your life, and business on the go is integral to your lifestyle. The lack of a camera meant it didn't fit my bill, but at Rs 18,500 I was tempted—especially because of the inbuilt

Wi-Fi. The E50—the latest in the E series—reminded me of my second phone, the ultra-executive 6310i. At Rs 12,750, it's a good buy if you want a sleek, executive-looking phone. The SE M600i is sleek and a decent PDA-phone, but the lack of a camera meant I had to skip it.

My next stop was the Heera-Panna shopping centre—cell phone heaven! The Nokia N73 grabbed my attention—does it look cool! By its side was a SE K790i, which doesn't have the killer looks of the N73. Nevertheless, the 3.2MP cameras on both these phones are equally capable. Again, the Achilles heel seems to be the keypad. The SE K790i uses the same joystick for navigation as the K750i and, from my experience, that joystick becomes dodgy if you yank at it while gaming. At Rs 22,500 the deal sounded great, but I wasn't convinced.

I was able to get my hands on Samsung's slim-and-trim SGH-X820—this phone is as flat as a biscuit; the keypad, though nice and tactile, isn't quite suitable for extended typing—something I will be doing a lot. But at Rs 15,800, the X820 is surely the thinnest phone I have come across.

Too many options! The SE W950i music phone caught my eye, and after handling it for a while, I gave it back; didn't give me that reassuring feel—you know what I mean!

Even after searching through the entire collection from every vendor, I wasn't able to find one phone that fit my needs. Finally, I came across the Nokia N80—a slider. This stocky phone crams in Wi-Fi, a relatively high-resolution screen, a 3.0MP camera, FM radio, an MP3 player with a MiniSD card, plus all the usual features, bar none. Priced at Rs 25,500, the Nokia N80 was the phone I was looking for—I instantly whipped out my credit card! ∎

Illustration **Pravin Warhokar**

Want more of Agent 001? Turn over to read his answers to your buying questions

FedExBox?

Q Microsoft's Xbox 360 is priced at Rs 20,000, that too for the base version, whereas the same kit is available for just $299 (Rs 14K) in the US. Should I buy it from here or from the US?

Anish Gaur

If you're looking for a bargain, getting the Xbox 360 from the US makes sense, and you can use the extra money you've saved up to get a second controller or the hard drive. There are, however, possible hidden costs—there's a chance that you could be charged customs duty for it, and it is not legally possible, as yet, to have the warranty transferred to India. You will probably need to spring for a power adapter as well. You should find out about such things before you take the leap—perhaps ask someone who's gotten one for himself.

Wire Transfers

Q I recently bought a Nokia 6070. I want to download the contents of my phone—photos, contacts, etc.—to my computer. What accessories need to be purchased, and what about make and price?

D Basak

The Nokia 6070 is a mid-range phone and offers Nokia's proprietary "pop port" for connecting it to your PC. You will have to buy the Nokia CA-42 adapter cable, which is sold as an accessory. The original cable from Nokia will be expensive; consider opting for a compatible one which retails at just Rs 300. Apart from the cable, install Nokia PC Suite on your PC—you can download it from Nokia's Web site.

No Frills For Flash

Q I want to buy a 1 GB Flash, preferably branded. The drive need not have fancy features—just a plain drive for holding and transferring data. How much will it cost, and where can I buy it from?

Saurabh Sawant

There are lot of Flash drives available today; you could just go out and pick any of them. Drives by Transcend, Kingston and A-Data are worth the money, and you should be able to find them easily. We recently reviewed the A-Data Oriental Elite 512 MB drive and were blown away by its speed. For Transcend, contact Mediaman at 022-23828100; for Kingston, contact Kingston Technology at 022-26592961; and for A-Data, contact KMI Business Technologies at 022-30224715. Most of these 1 GB flash drives will cost Rs 1,200 or so. Flash drives from Lexar and SanDisk may not be available where you live, but these are the best. They come at a premium, though.

SE All The Way

Q I have a budget of Rs 11,000 for a good imaging / music mobile phone. Though I have shortlisted Sony Ericsson's K750i and LG KG300, I would like to know which one is better. What is the cost of the USB cable and 512 MB Memory Stick for the SE K750i?

M M Joseph

The K750i and LG KG300 have identical features; the K750i sports a rather dated design, and the LG, with its curved edges, looks a little better. I haven't tested it, so I will reserve opinion, but at its current price—Rs 10,500—the K750i is hard to beat in terms of features and performance. Sony Ericsson bundles the USB cable with the phone. A 512 MB Memory Stick will set you back by an additional Rs 1,000.

Intel Vs. AMD—Again

Q I need a laptop for business use as well as for watching movies at home. What processor / platform should I opt for as a cost-effective solution and for good battery life? I want to decide from amongst AMD Turion, AMD Turion X2, Intel Core Duo, and Intel Core 2 Duo. Is it true that with the launch of Core 2 Duo, Intel is now the frontrunner in providing the best price/performance ratio?

Manav M

With the launch of the Core 2 Duo, Intel has indeed claimed back its performance title. On the mobility front, since the launch of the Pentium M processor, Intel has had an edge over its competitors. The Turion platform from AMD is good, but falls short of Intel's processor. Any laptop you buy right now should be Core based—Dell and HP have a decent line-up at good prices. Read our laptop test in our October 2006 issue, though the Core 2 Duo laptops were launched only after the test. If you're looking for a laptop around Rs 50,000, stick with Core Duo—Core 2 Duo laptops will be a little more expensive.

Compatibility Conundrum

Q I want to buy an Intel Core 2 Duo processor based system, but no vendor I visit is very keen on selling this new processor. They say the kit comes with a Gigabyte motherboard and not Intel original. Specifically, I want an Intel Core 2 Duo E6300 and a compatible motherboard. I have a PATA hard drive, and one vendor told me I can't connect it to the new motherboard. Is this true? Also, please suggest a decent graphics card for Windows Vista.

Avinash Singh

There are absolutely no compatibility issues between the Core 2 Duo and the Gigabyte motherboard; your vendors are lying. If you want to buy an original Intel motherboard, go with one based on the 965 chipset—there are around 11 boards to choose from. Read about them in our November 2006 motherboard test.

Your PATA hard drive will work fine, but I recommend switching to SATA as soon as you can—the slow transfer speeds of PATA will become more noticeable as the rest of your PC gets faster. The Core 2 Duo E6300 is an entry-level processor and the cheapest, and if you can spare 4K more, I would suggest the E6400—it offers better performance with more demanding applications.

To run Windows Vista, anything upwards of an NVIDIA 6600GT or an ATI X850 should be fine; I recommend a 7600GT-based card. You'll get a decent one in the Rs 9,000 bracket. ∎
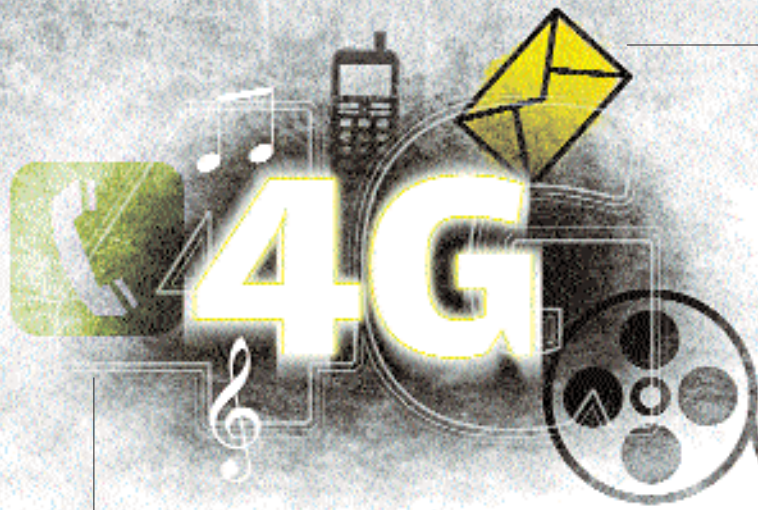
We haven't seen 3G yet, but we've been told India might leapfrog directly to 4G

Samir Makwana

Technologies in communication systems keep changing. You've probably come across "2G," "3G," and "4G." But what does "G" mean anyway? Put simply, "G" is "Generation"—it refers to the generations of evolution of wireless communication systems. The first generation, 1G, was based on voice-only analogue cellular systems; the second generation (2G) on digital transmission technologies; and 3G focused on integration of voice, data and multimedia transmissions at greater speeds.

Different Views And Definitions

As we move towards this, the next generation of wireless communication, there is much difference in opinion on what 4G exactly will be and consist of. A number of different definitions and views on 4G have been put forth by different companies and countries! It is, therefore, difficult to give you a *definition*, as it were, of 4G.

The International Telecommunications Union (ITU) defines 4G technology as providing data-transfer rates of 1 Gbps when stationary and 100 Mbps in a mobile environment. Japan's NTT DoCoMo has introduced the concept of "MAGIC" in its vision for 4G: "Mobile multimedia; Anytime, anywhere; Global mobility support; Integrated wireless solution; and Customised personal service."

According to the European Commission, 4G would ensure seamless mobile services across an intermeshed web of wireless systems and networks—from private to public, indoor to wide-area.

4G will probably be a convergence of technologies that would allow seamless communication via broadband over wireless networks using the best available network (wireless LAN, radio, TV broadcasts, or satellite).

The ITU has dubbed 4G as "3G and beyond." There is still a cloud of confusion, though, about the definition... but at least we know what 3G is, so:

The Problems With 3G

The third generation of wireless communication technologies aimed at supporting voice, data, and multimedia over wireless networks with higher transmission speeds. There were limitations and difficulties that 3G failed to overcome: the difficulty of moving across different wireless networks seamlessly, the limitations of the spectrum and its allocation, and data and multimedia transport at high speeds between fixed networks and sub-networks.

The fourth generation has been touted as being able to overcome these limitations by improvement in areas of wireless networks, with regards to capacity, bandwidth, mobility, wider area coverage capacity, and service properties—categories, cost, and quality.

What Does 4G Promise?

The major change with the deployment of 4G will be wider broadband for mobile wireless communication. This generation focuses on optimised transmission of multimedia content through seamless networks covering wide areas. It will also support fixed wireless networks in addition to other cellular services.

By integrating existing technologies with emerging advanced technologies, 4G will offer broader bandwidth, smooth and quick transport of data and multimedia over a large number of wireless devices and networks, and quicker transfer of data/call in progress from one network to another without a communication break.

According to industry experts and researchers, 4G networks would provide transmission rates of up to 100 Mbps in stationary conditions, and up to 20 Mbps at 100 miles an hour! This means that an entire CD can be sent across in a minute!

In future 4G infrastructures, IPv6-based (refer *Know More About IPv6*, *Digit*, October 2006) network architectures will support a large number of wireless communication devices and will be used as a common protocol by various sets of networks for Internet access over wide areas. IP-based systems will offer an end-to-end state of data transmission with minimal data packet loss.

There are, in this, the fourth generation, a lot of technologies and standards that will be competing: WiMAX, WiBro (Wireless Broadband), and more to come.

Deployment

The deployment of WiMAX (802.16e) as the next generation 4G technology platform was announced by Sprint Nextel with support from Intel, Motorola, and Samsung earlier this year. NTT DoCoMo is actively experimenting on the packet speed transmission and further developments in 4G technologies. Its deployment worldwide is expected after 2010, with the assumption that 3G networks and technologies will have been successfully deployed.

According to Dayanidhi Maran, our Minister of Communications and IT, third-generation technologies have certain limitations, and would not prove to be cost-effective. He therefore announced, in 2004, a plan for the country to leapfrog to 4G.

It's absolutely unpredictable what technologies might evolve until 4G is actually implemented, and how it will be. At present, industry experts and developers propose it as a convergence of technologies, such as a combination of WiMAX and WiFi. ∎

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Space.com & LiveScience.com

Bored? "Go read a book," as they say. Or you could head to these sites and rekindle the sense of wonder you had as a kid

Prakash Ballakoor

Space.com

Another one-stop-shop portal, space.com has all the top stories, images and videos related to space, satellites, behind-the-scenes politics that affect space programmes, and more. To round it up, there's even a small section on "gossip"!

The main page sports an easy, tabbed layout. That aside, what pleased us most was the content! "Destinations," the home page, has the latest news and analysis. This page also sports top stories, special reports, and events around the world. The multimedia content here includes videos and animations relating to space science: you can see a video of the Leonid Meteor Shower, for example. A Reader's Pick section showcases the best-voted images and videos.

The "News" section showcases five highlights of the day; the Recent Headlines tab here leads you to a listing of contemporary news items.

The SpaceFlight page: videos and more

The section called SpaceFlight is dedicated to space launches. You get complete coverage of worldwide space launch operations as well as mission archives. There are interesting videos to be watched here.

The Science section talks about discoveries, new findings, and such. Why do scientists believe there's water on Mars? Tons of well-

Space Technology—the bleeding edge

researched articles are waiting to be read here. If you didn't know the sun has sisters, or of the history of black holes, this is the place to be.

The Technology section profiles the various technologies related to spacecraft, robotic probes, rockets, and failed missions.

"Entertainment" updates you on movies, books, comics, TV shows, serials, and even *songs* about space, *aliens*, astronauts, and more.

Space.com is not just about news and entertainment—it also has content for hardcore stargazers, in the SpaceViews section. Multimedia content here relates to the solar system, the Milky Way, and galaxies. Wallpapers and images of imaginary space stations, satellites, and such can be found here. Images from the Hubble telescope and rare Space Shuttle images find a place here, too.

This beautifully-made site will most definitely satisfy the appetite of sky-gazers (and young, wannabe astronauts)—we certainly loved the quality, quantity, and range of the content, and we also happen to have loved the design! For those yet to explore "the world of the universe," so to speak, we bet that having visited the site once, you'll be hooked!

LiveScience.com

A wonderful site, this one dedicated to science in general. You can find stuff relating to the animal kingdom, health, forces of nature, environment, technology, fictional science, history, and strange news.

Navigation is a snap at LiveScience

The first section—"Animal Domain"—is one of the best: it features some of the wildest and strangest facts about animas. An "Animal of the week" section puts the spotlight on a particular animal, with a small description and images. If static images are off-putting, there

are videos to watch! Watch the Wasp Hound, extraordinary birds, and baby pandas! In this section are also quick links to attention-grabbing stories classified by animal habitat—earth, water, and air. For the serious, detailed studies of subjects in the animal world are discussed in a section called "Animal Domain."

"Health SciTech" talks about everything health-related: innovative drug research, myths, and facts related to human health. Videos include Attention Training, Flu Fighter, Exercise and

Health SciTech: the state of the art

Genetics, Gene for Exercise, Humor and the Sexes, and thousands more! Special reports under four permanent categories—Edge of Humans, Smart Medicine, Inside your Mind, and Live Longer, bring you the latest news in these fields. The titles should be enough to whet your appetite.

"Forces of Nature" talks about weather, changes in climates, disasters due to nature, and strange phenomena. Predictions about forthcoming disasters of nature and how these will affect us are covered in the Top Stories section.

Did you know that diamonds can be melted? That batteries can be recharged wirelessly? That light bulbs can burn away tumours? Such facts and more are to be found in the Technology section. Technologies of the future, and innovative developments, are discussed under "Science of Fiction." Interesting name for a section!

"Strange News" covers the wildest innovations and happenings in the fields of nature and medical science. Take the idea of ghost hunting, for which high-tech equipment is used by ghost hunters!

This, again, is one of the best Web sites we've come across in a long time. Like with space.com, it's hard not to keep coming back for more. ∎

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An Actual Class Vs. A Virtual Classroom Session

Samir Makwana (samir_makwana@thinkdigit.com)

I'm one of the lucky few to have had the opportunity to experience both a regular classroom session as well as a virtual one. So what's better, in terms of the learning experience, and more importantly, in terms of fun?

Me trying to learn something in a typical class

No writing notes—everything's already scanned!

Stage 1

Guest lecturers are often invited to take sessions on special topics in colleges. Some of them are really interesting and keep you engrossed, while others can put you to sleep faster than a sledgehammer to the temple! The guest this time, was from the US, so we tried to show him some respect by passing fewer chits around.

A few months later, my college scheduled a virtual classroom session with a different professor from the US. We were worried that our shared 1 MBps connection might not suffice; however, it seemed good enough. The time difference was painful, because not only was the professor in the US, a lot of the students were from different countries / cities.

Stage 2

This lecturer's style appeared to be dictating from pre-prepared notes—70 pages of them! Our hands were killing us as we wrote page after page trying to keep pace with his dictation. Finally a friend hit upon a solution, and began pretending to not understand his American accent, making him repeat himself often. He got the drift and slowed down.

This professor had a thicker accent than the previous one, but because we were in a multinational virtual classroom, a lot of us were too shy to ask her to repeat herself. What she did do, before leaving, was to give the most confused-looking out of the lot her e-mail address.

Stage 3

The distinct advantage of the real classroom was the fact that I could ask questions and have them answered immediately. Also, with everyone present, the lecturer didn't need to explain the same thing over and over again to all 30 students!

The biggest advantage of the virtual world is the fact that all course material and suggested reading are already in the digital format. Photocopies fade, and aren't as clear.

Stage 4

Thankfully, he left us a copy of his notes so we could all make photocopies for ourselves. Good thing too, because writing 70 pages at a speed of a page a minute is just a tad much for me!

The professor kept in touch with us via e-mail, and even sent us her notes, pictures, audio, and other material after the session. The tech way was proving to be the couch potato's dream!

Fun: **4.5/10 (What did you expect?)**

Fun: **7/10 (A novel experience!)**

And The Winner Is...

The old way has the advantage of face-to-face interaction, and you get answers faster. It also means a smaller class with more attention being paid to each individual student. This was a tough choice, but I chose to go with the tech way as the winner. The virtual session helped us interact not only with the professor, but also with people from across the globe. Besides, I'll do anything to have my notes in e-format! Of course, if there's no broadband connection, you'll just have to forget about the virtual classroom!

digit BUYER'S guide

A Complete lowdown on 31 categories to help you make that crucial buying decision

INDEX

DOING THE MATH

Accounting software can't make child's play of managing accounts, but it can go a step in that direction

Accounting is an important and integral aspect of any business, and can be a key component in its success. Accounting software provides you with the tools and information to keep your financial records in check, but there are many packages available, and determining the one that suits you is a bit tricky.

QUESTIONS TO ASK
What accounting modules are present?
Accounting modules are categories required to successfully maintain your business finances (such as Accounts Payable and Accounts Receivable). Does the accounting software have all the basic accounting modules you'll need? The bells and whistles of the software are irrelevant if the basics aren't covered.

What reporting features are available in the software?
Consider an accounting software that offers a wide range of reports. You should be able to print at least one kind of report for every module. Reporting features are often built into each section, but it's better if you can create reports from anywhere in the program. Customisable reports save you time; look for accounting software that will let you set your own criteria.

How easy is it to use the software?
Look for software that is simple to install, set up, and understand. The best accounting programs make navigating intuitive, so you never have to guess where you are or what to do next.

What about help and support?
Look for e-mail and phone support; toll-free and live support as well as online help is a bonus. Online, you can look for indexed help topics that can be searched easily. You'll want quick access for both technical help and accounting help for your software. Accounting software companies should have qualified people—both technicians and accountants—who can answer tricky questions.

Will the finance software grow with your company?
Look for accounting software that lets you grow and customise your system to fit your individual business needs. In short, the accounting software should be able to adapt to your company's growth.

Does the software have a Fixed Assets feature?
This is the least common of features, yet it is of enormous importance. The software should be able to calculate depreciation as per the income tax act and company act, and according to written-down value method and/or straight line method. A location-wise fixed asset register should also be maintained. It should be able to manage as many fixed assets as you may require. ∎

What To Look For

Accounts Receivable: Sales of products, goods, or services rendered, including invoices and shipping for sales. It should provide age-wise reports of debtors.

Accounts Payable: This involves paying bills, writing cheques, paying vendors, making purchase orders, and creating quotes and memos. It should provide age-wise reports of creditors. Prefer accounting software that has provision for bad debts. You should be able to create custom purchase orders, quotes, and vendor credit memos; and also be able to print cheques, tax forms, and customise vendor cheques.

Payroll: This section has everything you need to process payroll quickly and easily. You can run payroll for some or all employees, print cheques, void cheques or directly deposit funds. Look for details of PF, ESIC, number of employees, and calculation of total tax payable for each employee.

Inventory: This includes tracking product numbers, supplier contact information, stocking locations, and different cost methods. Look for an integrated system along with variance reports.

Banking: The software should feature bank reconciliation statements with details of post-dated cheques. It should alert the user whenever cash balance or bank balance exceeds debit balance, and have a facility to specify exchange rates and conversion into INR.

Time Billing: Create expense tickets, daily and weekly time tickets, reports and sales invoices—all printable. Self-billing is preferable; the purchaser will bill the amount and give it to the contractor.

Job Costing: With this tool, you can estimate costs for specific jobs, specify cost codes, and divide jobs according to their phase. You can also track jobs and specify completion.

General Ledger: Here's where you change accounting periods, make ledger entries, and register accounts.

Busy
Business Accounting Software

HOUSING PLANS

The role of thermal dissipation falls solely on the trusty old cabinet, which until yesterday was merely considered a necessary evil...

"Do I really need a new cabinet?" Well, the fact is, if you asked us this a few months before the Pentium 4s and Athlons of the world came along, we'd have answered in the negative! Processors, memory, graphics solutions, and hard drives have all become significantly faster. The downside is power consumption, which results in higher heat dissipation. A few years ago, a 180-watt power supply (we're talking real output and not claimed) was sufficient to power an entire PC. Today's graphics cards happily consume in excess of 200 watts, and top-end dual-core processors demand close to 150 watts!

All this heat generated has to go someplace, and that's why choosing the right cabinet has become essential for a silent, stable computing experience.

MYTHS AND REALITIES

Combos are better: a huge mistake most people make is to settle for the cabinet and power supply combo their hardware vendor dishes out. Cabinets are available discretely, and you can also select a power supply—even if it's a different brand. There are no compatibility issues, and neither are you under any compulsion to buy them as a bundle. You may need a snazzy-looking cabinet but a cheaper power supply. A hardcore enthusiast may buy a cheap cabinet to mod, and a powerful power supply.

More fans means the cabinet is better: While more fans may seem to aid ventilation, more critical is the airflow. It's not the number of fans that is important. It's the direction of airflow, as is the ability of a cabinet's fans to draw in fresh (cooler) air, and expel hot air simultaneously.

QUESTIONS TO ASK
Does the cabinet support at least two fans?

You'll need two fans at least, one to remove hot air, and another to blow in cool air. Your cabinet may not come with two fans, but should have the required screw holes allowing you to mount such fans later on. As mentioned, try to ensure support for larger — 120 mm fans.

I've heard of "compliance" in relation to cabinets. What's that?

The latest cabinets sport compliances to certain thermal standards. Because these standards are the "minimum recommended," some enthusiast cabinets may exceed these standards. In such cases compliances will not be mentioned. However, the TAC standard (Thermally Advantaged Chassis) is one such standard that is pretty much adhered to (or exceeded) by most cabinet manufacturers. The TAC standard calls for a compulsory vent in the side panel over the processor-heatsink area, called the CAG (Chassis Air Guide). TAC also makes mandatory another, smaller vent above the graphics card area. Besides this, front and rear vents (which are capable of being populated by fans)

are necessitated. The reason behind the TAC standard was the excessive heat generation by today's PCs, which causes stability issues especially in tropical climates such as ours. It's good to look out for a cabinet that has a few (if not all) of these features. Give larger fans preference: they're quieter and move more air.

Future Trends

Cabinets don't "evolve." Rather, they react to changes in other product categories. We've seen a lot of snazzy "see-thru" cabinets, meaning the presence of a transparent, windowed side panel. Manufacturers aren't very far behind the case modding enthusiasts with the jazz factor, and the good news is when you go cabinet shopping, there's absolutely no dearth of good choices. ∎

💡 What To Look For

Form Factor: Cabinets are compatible with all ATX motherboards, so your choice of cabinet will never restrict your choice of hardware.

Desk space is your main deterrent here. The basic form factors are Full Tower or just Tower (tall, full-size cabinets), Mid-Tower (which typically support 4 x 5.25 inch external drive bays), and Mini-Tower.

As a rule, cabinet vendors aren't very vocal about these standards. You'll need to do your homework here.

Expandability: A cabinet will typically house three to five optical drives, depending on its height (form factor). Always look at the word "external" when checking on the number of available optical bays. A cabinet may support six 5.25-inch drives but only four may be external. This virtually means that the two internal 5.25-inch drive bays are useless, unless the cabinet bundle includes a 5.25-inch to 3.5-inch converter (in which case these are usable as hard drive bays). Similarly, for hard drives, you need to check for the number of internal 3.5-inch bays.

MYRIADS OF MOBILES

Choosing a cell phone is probably the most difficult task across all categories of tech products!

Cell phones today have so many functions, shopping for one is a formidable task. The sheer numbers of phones lining some streets in cities like Mumbai and Delhi doesn't help either!

MYTHS AND REALITIES

▶ **Charge the battery only when it's completely drained**: Cell phones today use lithium-ion batteries, so one need not wait till the battery discharges completely. This idea is true only with NiMH batteries, which are no longer used.

▶ **Signal booster stickers help in reducing dropped calls**: If boosting a signal was so simple, why didn't the manufacturer incorporate a signal booster in the first place? Don't believe this petty claim! Your cell phone manual will probably have instructions on how to hold the phone so as to avoid signal interference.

▶ **It's dangerous to use cell phones in or near petrol pumps**: Quite true. Radiation such as those emitted by a cell phone can at times ignite flammable chemicals.

QUESTIONS TO ASK
What are the types of cell phones?
From a design perspective, candy bar, clamshell (flip-open) and sliders are the most common. On the price front, budget, mid-range, smartphone and PDA-phone are the categories.

Any phone below Rs 5,000 fits the budget category: rudimentary features such as a colour display, SMS, a 500-odd contact list, alarm clock, and a calculator are part of the package.

Mid-range phones fall in the 5-15K range. They include all the basic features and also come with an MP3 player, a PIM, a better digital camera, and more.

Smartphones are nearly identical to mid-range phones, but offer support for installing third-party applications, games, etc. and also have excellent PC synchronising options.

PDA-phones are for on-the-move folks who demand instant access to data and seamless synchronisation with their PCs—PIM functionality is key, and so is the ability to input data faster.

What should I look for in a cell phone for playing music?
Check how many file formats the MP3 player supports. Second, check the amount of memory the phone offers, and whether it has an option to increase the capacity. Third, check the type of memory it supports: MMC and SD cards are cheaper than a Sony Memory Stick.

Can I buy a cell phone instead of a digital camera for taking photos?
Most cell phones are equipped with VGA or 1.3 megapixel (MP) cameras. VGA is too low for good-quality photos, and 1.3 MP cameras offer just about decent resolution. Phones with 2 MP and above offer good photos, with better colour reproduction and less noise. We're now seeing phones with 3.2 MP cameras, which rival even entry-level digital cameras.

What are the different ways of connecting a cell phone to a PC?
Mid-range phones and above have USB or proprietary ports. In most cases, the cable is optional and expensive. If your phone supports Bluetooth, buying a Bluetooth USB dongle makes for an easy and cheap connection with a PC. Quite a few PDA-phones support Wi-Fi.

Do I need software to connect the phone to a PC?
Yes. The software is bundled along with the phone on a CD, or can be downloaded for free (in most cases) from the manufacturer's Web site.

What about accessories?
Music lovers should invest in good-quality headphones. A crystal case protects your phone from impact. A desk cradle for a PDA-phone makes life easy; look for one with a charging point for an additional battery. ■

💡 **What To Look For**

Inbuilt functions: Look for the following: Directory (the number of contacts that can be stored), messaging (text and MMS), a calculator, games: the ability to install additional games if desired, and some pre-loaded ones, personalised/custom sounds, an appointment reminder/calendar, auto-redial, voice-activated functions, vibrate mode: built upon with profiles, lock/alarm, integrated stereo FM radio, external volume/ringer control, profiles.

Advanced features: Look for the following: 1.3 megapixel and above camera for better pictures, a memory card slot—it comes in handy when using the phone as an MP3 player, PC synchronisation—useful when using the phone as a PDA, MP3 player—look for one with features such as equaliser and dedicated buttons for playback, Bluetooth—good for short-range communication between phones, GPRS (General Packet Radio Service) for Internet access, Hands-free headset/speakerphone, voice recorder.

THE TRUSTY OLD DESKTOP

Branded vs. assembled is still a question mark, but the price gap is closing

Assembled PCs once ruled the market entirely, while branded PCs were relegated to medium to large businesses, schools, and colleges. In a market like India where value for money affects all buying decisions, this was quite expected. But things have changed. Though assembled PCs still retain a bigger market share, branded PCs are getting a stronger hold of the market. The factors that have led to this change are many, but the strongest one is that branded PCs are available for only a little more than what an assembled PC costs.

MYTHS AND REALITIES

Branded PCs are expensive: True only to an extent. Branded PCs cost a little more than assembled PCs. There are some very strong justifications behind this, though. Branded PCs come with licensed software, offer better support and features like one-touch recovery.

Branded PCs offer lower-powered configurations: Not true at all. Most PC manufacturers have offerings targeted at all segments of the market. And if you want to specify your own configuration, some manufacturers allow you to do that as well.

QUESTIONS TO ASK
What kind of support do I get?
The most important question. Check whether the manufacturer has a helpline for technical support. A technical support line lets you get in touch with qualified technicians who will help you troubleshoot your problem. Most software glitches can be resolved by talking to technical support. They also help you determine if there is a hardware issue with the PC. Depending on the warranty provided, your PC can either be collected by authorised personnel, or you may have to carry it in to the nearest service centre.

Can I overclock my branded PC?
Overclockers, stay away from branded PCs! They don't allow you to overclock using the BIOS. And if you try some hard overclocking, it *will* void your warranty!

Can I upgrade my branded PC?
Upgradeability is one area where branded PCs lag behind their assembled counterparts. Since some branded PCs use custom-built motherboards, upgrading components can be a problem. Check the manufacturer's Web site and find out what upgrades are possible. These may include installing more RAM, a better graphics card, or a larger hard drive.

Future Trends
It's time to usher in HD (High Definition) content. Today, you can record live TV shows and pause them; what's more, you can view one show while recording the other, and you can do all this with a remote! In the near future, with better hardware—namely, larger displays and more number of supported sound channels, PCs will change the face of entertainment. Bigger and faster hard drives will ensure that you can store as much HD content as you desire. ∎

💡 What To Look For

After-sales support
Never forget to check the guarantee/warranty provided by the vendor. Some vendors have a replacement warranty, while others just fix the component in question. A replacement warranty means a quicker turnaround time. Check where the nearest authorised service centre to get the unit fixed is. This factor doesn't sound very important as long as your PC is working fine, but not so once you face a problem!

Bundled software
Most PCs come pre-installed with an OS. Some low-end PCs come with either FreeDOS or Linux installed. These require you to buy your own copy of Windows (if you need it), and this can push up the overall cost of your PC. If you opt for a PC with Windows pre-installed, check the version; you also get some utilities like CD/DVD authoring tools at no extra cost.

Make sure you get copies on CD of the OS, drivers, and other software in case you want to do selective installation.

Features
Branded PCs offer you features like one-touch recovery. This helps you recover your PC to factory-shipped state—no need to go about formatting and installing Windows, drivers, and the other software that came pre-installed. Check for the location of the connectors. It's good to have the USB ports and audio connectors on the front.

The Display
We recommend investing in an LCD display. They save a lot of space, and don't add too much to the cost of a system. LCD is the way to go for the future. If the vendor is offering the option to buy your monitor separately, refer to the section on LCD monitors.
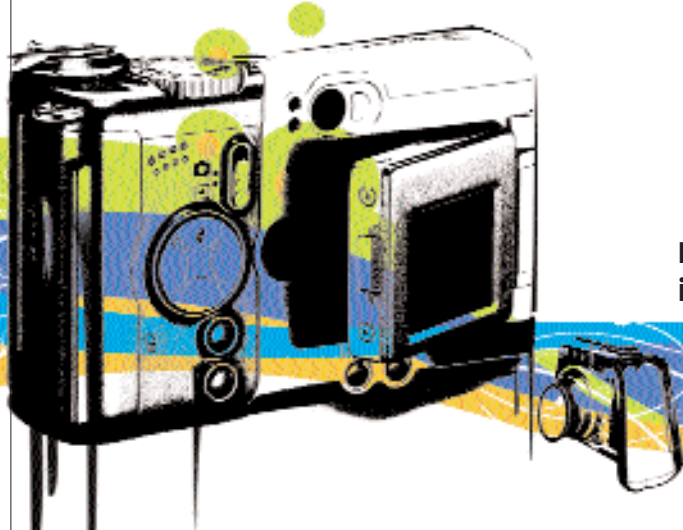
DIGITAL EYES

Film is dead... and here's how the world is shooting these days

Digital cameras—everyone seems to either have one or want one! If you haven't already taken the plunge, there's no reason not to... if you're clueless, here's a handy guide.

MYTHS AND REALITIES

Digital Zoom: A totally useless feature, it's pure marketing hype. Also known as interpolation, it causes severe deterioration in shot quality. Never buy a camera on the basis of this feature. Look at the other specifications on offer (like optical zoom).

Megapixels: Important, but severely overrated. Two decent cameras, one with a 6-MP rating and the other with an 8-MP rating could produce startlingly similar results.

Onboard memory: Not really important; after all, 32 MB will allow you to store just five or six photos at 6 megapixels. You'll need a memory card anyway, so you can safely overlook the onboard memory available.

Large LCD viewfinders: Flashy but not really useful. The larger the display, the quicker your batteries will run out. Something in the range of 2 inches should be good enough.

QUESTIONS TO ASK

What form factor is right for you?

Is portability important, or do you want a bigger camera big on performance? Size and functionality is generally a trade-off. Choose between the ultra-compact, compact, SLR-like and SLR form factors.

Do you plan on using your camera for video recording?

Most cameras support video recording at 352 x 288. Some newer ones support 640 x 480. The frames per second rating is important: at 352 x 288 it should be around 30 fps, while at 640 x 480, look for at least 15 fps. Don't expect great quality though, that's what camcorders are for. You'd be better off buying a digital video camcorder that offers still photography as a feature if what you're really looking for is video recording.

Nikon

Do your hands shake while clicking?

Look for image stabilisation. This assists in taking blur-free shots by compensating for hand-shake.

Future Trends

Standardised file formats are perhaps the biggest drivers of digital imaging, maybe even more so than the digital camera itself. While all digital cameras support the JPEG format, a few support TIFF, and even fewer support the RAW format. Most professional photographers will swear by the sheer flexibility of RAW, owing to the 16-bit quality of RAW images (all other formats offer a maximum of 8 bits).

Despite the enormous size of RAW files, manufacturers are slowly beginning to add RAW capture support to digicams. This is possible partly due to the diminishing prices of Flash memory. ∎

💡 What To Look For

5 Megapixels: Do not go below this—output quality will suffer. If you want 5 x 7 prints of your photos, 6 or 7 MP should suffice.

3x optical zoom: The minimum. For outdoor shooting, you'll need much more—12x should suffice.

Memory Options: Flash memory is getting cheaper, and rapidly. 1 GB cards offer the best bang for the buck, and we recommend at least a 512 MB card. At a resolution of 5 MP in high-quality mode (applicable to JPEG), you'll get about 200 photos. Brands are important as far as Flash memory goes. Don't buy unbranded memory cards: transfer rates, performance, and reliability will suffer in the long run.

Macro Mode: You can take stunning close-ups with minute detailing on small subjects—flowers, jewellery, insects, and such.

Rechargeable Lithium-ion batteries: Regular batteries mean recurring expenses. Moreover, changing batteries can be a pain. A camera using Li-ion batteries is highly recommended because of the sheer convenience offered. Most cameras with rechargeable Li-ion batteries will allow the batteries to charge from the USB connection itself.

Indoors and outdoors: For outdoor and scenery shooting, you need lots of optical zoom (12x is a good place to start), and perhaps an SLR-type camera. A good flash for indoor shooting is an absolute must—for outdoors too, except when shooting in sunlight.

Connectivity options: All cameras come with USB 2.0; some may come with FireWire. This gives you flexibility as well as greater transfer speeds. Look out for Wi-Fi connectivity, an emerging feature on a few select models.

Other things: Look for multiple exposure settings on the camera. Shutter speeds have a number of settings; the more the camera supports the better. Look for lots of white balance options as well, which will allow you to adjust image tone according to lighting.

LITTLE DATA VAULTS

All of a sudden, Flash drives have become essentials

Flash drives use the USB interface, and can be used for data storage as well as portable desktop computing. The reliability and compact size of these drives makes them ideal for carrying your data along. Remember, they're more reliable than CDs or DVDs! These days, some Flash drives come with innovative features like U3, which allows you to use your software without installing it on a computer.

With the portable versions of most commonly used software available, you can virtually carry your entire office with you in that tiny space: wherever you go, just plug in your Flash drive and you have all your software in front of you!

You can also configure a Flash drive so that your computer can't boot unless the drive is plugged in—making for a lock and key mechanism.

Flash drives capacities are in the range of 32 MB to 8 GB. Flash prices are falling by the month, and you can get a 1 GB drive for Rs 1,000. Select the capacity based on requirement, but there's no point opting for less than 256 MB (Rs 600).

The interface of choice is USB 2.0. Don't even think about buying an older USB 1.1 drive—your dealer may have old stock left—it'll take ages to transfer large files. USB 2.0 has a transfer rate of 480 Mbps—compare that with USB 1.1 (a.k.a. USB Original) at just 12 Mbps!

Flash Drives As Memory Card Readers

In addition to the inbuilt memory, there are Flash drives that also act as memory card readers. You can plug in a supported card and just go ahead and access them. Supported memory cards differ depending on the model and manufacturer. This really neat feature comes in handy if, say, you want to transfer photos from your camera stored on an SD card to a PC, or if you want to transfer MP3s on a miniSD card to your cell phone and you don't have the necessary cables to connect your phone to a PC. This feature, essentially, saves you from needing to buy a memory card reader. Of course, if you have a laptop with a memory card reader, there's no point in getting such a drive.

What To Look For

Security
Many drives offer integrated software that requires a user to enter a password in order to access the data—a very useful feature indeed for the paranoid. And for those who tend to forget their passwords (or are so paranoid they think someone might crack them), there are Flash drives with biometric security. They have biometric sensors attached to the drive. You'll be able to access your data only after swiping your finger!

Software features
You now get Flash drives that support the U3 standard. This allows you to carry your software and preferences around on the drive, eliminating the need to install the software on any machine you use. You can also use your software on a public computer where you don't have the rights to install software. You need not configure your software settings every time you change a machine—your preferences are saved on the drive and loaded when you plug it in. There is a wide range of applications available for U3 drives, spanning across almost all software categories. Manufacturers also bundle some commonly used software with U3 drives. You can download more U3 software, both paid and free.

Build quality
Flash drives are usually used to carry important data, so the build quality of the drive is important. While most drives come in regular plastic casings, some of the expensive ones come with a rubber casing so they're more rugged. Try and opt for a drive with a sturdy—preferably rubber—casing.

Future Trends
Larger-capacity Flash drives have become quite affordable now, and Flash is getting cheaper by the month, like we said. Windows Vista's capability to use Flash drives as cache in the form of the ReadyBoost feature will speed up your computing experience.

Essentially, you can plug in a Flash drive and have it show up as physical memory on your system. You can also unplug the drive without any fear of losing data or affecting an operation. We're really looking forward to this combination of portability and increased performance.

Flash drives are changing their form factor as well. From the thumb-sized Flash drives to wearable drives that can be wrapped around your wrist, they have become trendier. ■

GET REAL!

Graphics Cards are bridging the divide between reality and virtual reality. Usher in the new age by getting one for yourself!
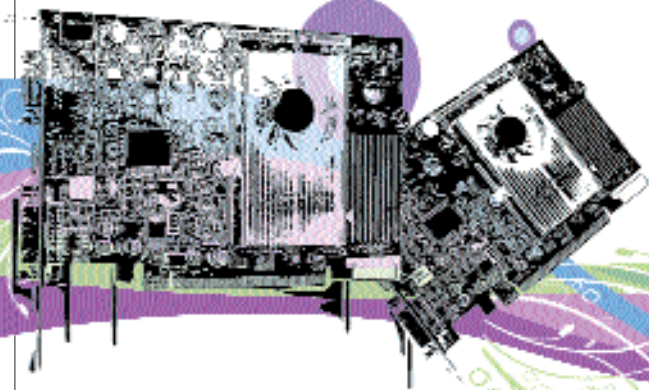
Graphics cards aren't now considered a novelty exclusive to the rich or to gamers. With very tangible real-world benefits, it's time everybody discovered the sheer performance and viewing benefits, not to mention the display flexibility, that a graphics card brings with it. Need we mention that with Vista coming out in a few months, this bit of hardware will become a necessity? Even an upgrade to a very mediocre graphics card from an onboard graphics solution will give you significant performance gains.

MYTHS AND REALITIES

▶ More onboard memory is always better: a general rule of thumb, but not necessarily so. It's the chipset that's important above all else, and then memory. Putting 512 MB of memory on a low-end or mid-range card won't make any difference, since the graphics core will never be able to properly utilise all the memory bandwidth available to it.

▶ Clock speeds: another big myth. With the same chipset, sure, clock speed matters, but across chipsets and cards, it doesn't play a big role. This specification is more limited these days due to heat dissipation. What counts is the number of million / billion pixels and triangles a card can draw per second.

▶ Buying the fastest cards will ensure future proofing: absolutely nothing is future-proof in the world of graphics cards! Even the fastest cards available today will become mediocre if not defunct once DirectX 10 games emerge.

QUESTIONS TO ASK
Is a high-end card necessary?
In a word, yes! Because Vista will use 3D graphics for even regular windows, and not just games, a 256 MB DirectX 9 compliant card is the minimum recommended solution for Vista's Ultimate Edition.

The graphics core?
The choice of graphics processor is very important, since it directly affects performance. High-end graphics cores like the G70 and G71 have the following cards based on them: GeForce 7950GX2, 7950GT, 7900GTX, 7900GT, 7800GTX, 7800GT. ATI's R520 and R580 result in the following cards: X1950XTX, X1950XT, X1900XTX, X1900XT, X1800XT. These cores have certain characteristics like compliance to APIs, number of Pixel and Vertex Pipelines, and of course, clock speeds. The performance difference between two different parts based on the same core can be as much as 15 per cent, and with dissimilar cores, more than 100 per cent!

Extra connectivity options?
S-Video and Composite ports, which allow you to output the display to a TV set, are a plus. If you want to record TV, choose a graphics card with an integrated TV-Tuner. DVI connectivity has become essential these days, and a good-quality TFT panel can get a 10 per cent boost in visual quality just by using digital connectivity.

What about AGP cards?
AGP has been largely defunct ever since PCI-Express became mainstream. AGP cards are costlier than PCI-Express cards based on the same chipsets. Buying an AGP card makes no sense today, unless you have an old PC whose video solution just went kaput.

GIGABYTE TECHNOLOGY

Future Trends
We've all been exposed to the news that DirectX 10 will be the next big catalyst for the gaming industry, and both game developers and graphics card manufacturers are no doubt rubbing their hands in glee. PCI-Express 2.0 is also set to take over from PCI-Express 1.1, though backwards compatibility will be maintained. Supporting 10 GBps—version 1.1 supported 8 GBps—this new standard promises a few optimisations besides the obvious bandwidth advantages. With the kind of raw horsepower that today's graphics cards have, not to mention multi-GPU setups—SLI, Quad SLI and CrossFire—things can only get better. ∎

💡 What To Look For

Graphics processor: The core is as important as your CPU is to your system. All those pixel pipelines and the huge pixels per second count is courtesy the GPU (Graphics Processing unit).
DirectX 9.0c (Shader Model 3.0 support): DirectX 9.0c *compliance* and actual *support* are different. Make sure of support for Shader Model 3. Though DirectX 10 cards are already out, the actual API is still some time away, so it makes sense to wait a bit before investing in these costlier cards.

Dual DVI support: Allows for the connecting of two flat-panel monitors. With the falling price of LCD monitors, you should ensure that your new graphics card features at least one DVI connector.
Memory: 256 MB of video RAM is almost *de facto* these days for a smooth multimedia experience. That said, it makes sense to opt for more memory only if you are planning on getting yourself a much faster graphics card, and if you intend to run a lot of games on it. 512 MB is generally enough!
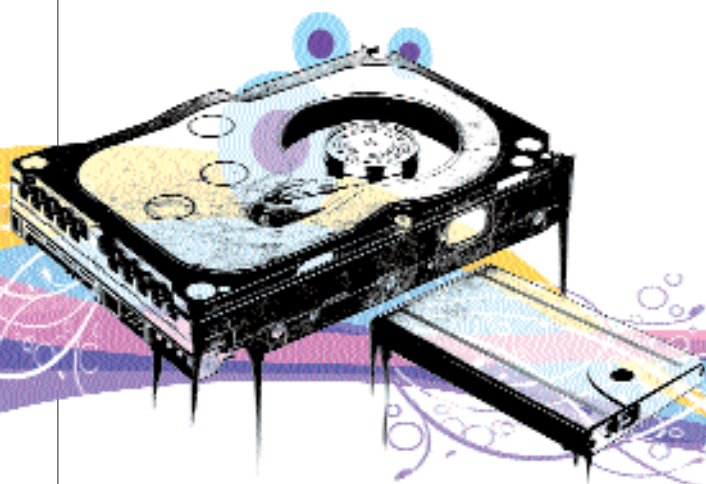
PLATTER MATTERS

We're almost there—in terabyte territory!

Over the past year we've seen an almost complete shift to Serial ATA. Manufacturers have also been bumping up both drive speeds and storage size. Several new models offer the best of both these worlds. Even better, you needn't pay much—hard drives are seriously affordable today!

Sceptics—would you call a 320 GB hard drive retailing at Rs 5,000 cheap, or what? 250 GB hard drives hover around the 4,000 rupee mark! The reason for this price downswing is the sharp incline in demand; multimedia content, DVD movies, and games being the reasons.

Myths And Realities

▶ **Choose any hard disk, it won't affect performance:** Wrong, big time! A hard drive is the slowest performing device in your PC, and its biggest bottleneck. The speed of a hard drive's spindle together with the integrated drive electronics affects performance a great deal.

▶ **Bigger hard disks are much costlier, overlook them:** Not so; it's price per GB you should look at. A 250 GB hard disk may have a lower cost per GB than a 160 GB drive.

▶ **SATA II is much better than SATA I:** SATA II is a newer standard. Performance gains aren't that really much.

The difference in actual, real-world data transfer rates would be less than ten per cent! The pricing should be the deciding factor.

▶ **Warranties make the big difference:** Today, warranties are identical across hard drive vendors for most models: five years. However, you do need to enquire about warranties, since some models—typically older ones—may come with shorter warranties. In any case, remember that if a crash happens, money isn't much of a consolation when you've lost your data!

What To Look For

SATA II
SATA II is allows a theoretical transfer rate of 300 MB per second, as opposed to SATA I which allows half as much. Although this isn't true in real-world scenarios, we've seen manufacturers up the storage solutions on their motherboards to utilise some of the extra bandwidth this new standard provides. SATA II drives also have support for Native Command Queuing, which improves drive performance during multiple access operations—when you multitask applications or do multiple copying and pasting.

Size
Define your usage. Since 160 GB drives are dirt-cheap, it doesn't make sense buying anything smaller. If your DVD and music collection is extensive, you may need something in the range of 250 GB. Working with space-hungry RAW video files may see the need for a 500 GB drive. Simple browsing and office work may never need more than 80 GB.

Parallel ATA
Don't waste your time here. Parallel ATA hard disks are only for you if your motherboard doesn't support Serial ATA.

Specifications
Spindle speed really makes a difference—the faster the better. 7200 rpm is *de facto* now, although you do get 10,000 rpm drives aimed at gamers and enthusiasts. Buffer doesn't make as big a difference, and 8 MB of buffer should be sufficient. Stay away from any 5400 rpm drives!

Multiple drives
Multiple drives will perform better if the load is shared. If your OS resides on one drive, and program files and data reside on the other, you'll notice improved performance. However, you'll also need more room in your cabinet and more power to drive all of them. The heat generated by three working hard drives will also be more.

The newer, bigger drives today are much faster than their predecessors of even a year ago. So a 250 GB drive today will be better than two older, comparable 80 GB drives. However, two 250 GB drives will perform better than a single drive provided the swap file and applications are on one drive and the OS on the other.

Future Trends
Besides the performance advantages of Serial ATA technology, we've also seen the introduction of Perpendicular Recording. This technology allows the packing of much more data (increased areal density) onto the same platter size.

We've also witnessed the dawn of a rather intriguing technology—HAMR. Heat Assisted Magnetic Recording uses lasers in conjunction with different variants of the media being used today to dramatically increase the amount of data that a drive can hold. Promises of hard drives capable of storing 10 or more terabytes of data five or six years down the line is something worth looking at!

Although the hard disk is still by far the slowest performer in your PC, it's reassuring to see the firm steps being taken to remedy the situation. ∎
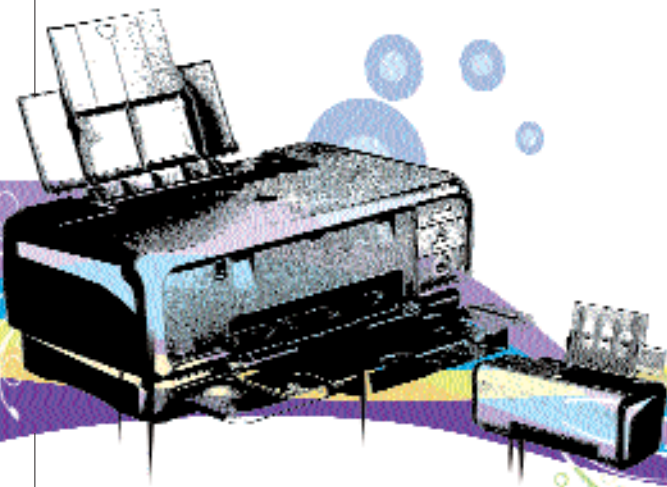
THE PAGE PAINTERS

There's competition from other devices, but don't write off the trusty old inkjet printer just yet!

Most SoHo setups have moved on to laser printers, while home users still prefer inkjet printers due to the lower initial cost. There is a large variety of inkjet printers available in the market, ranging from very basic inkjets for home use to those with network support for professional setups.

Inkjet printers have stiff competition today from inkjet MFDs, which promise convenience, space savings, and more by incorporating other devices. Of course, if you only need to print, as might be the case with many a home user, an MFD makes no sense.

Cost per page is a critical parameter to consider if the printer will be used in a SoHo environment. Laser printers are cheaper when it comes to cost per page, but they have a higher initial cost. For a typical entry-level printer, the cost per page hovers around Rs 2.50; colour printouts will work out still higher. Look for a professional business inkjet printer, defined by very high duty cycles and high cost. Though the initial investment is higher, it will work out in your favour in the long run. The ink cartridges used in entry-level printers can't handle heavy loads.

MYTHS AND REALITIES
Refilled cartridges have an adverse effect on a printer
There is no solid evidence to prove this. There could be problems with print quality if the cartridge is not refilled properly, though. The ink used to refill the cartridges is the cause of concern here. The refilled ink should match the characteristics of the ink used in the original cartridges. If the characteristics don't match, it can affect the efficiency of the printer in terms of both speed and quality. This is why manufacturers recommend the use of original cartridges—and also to ensure sales, of course! Try getting your cartridges refilled by a reputed company, not just any old shop you find that does it. To be on the entirely safe side, though, use original cartridges—you also won't have any warranty issues.

Laser printers give better print quality than inkjets
Not correct at all. Inkjet printers can have better print quality in terms of resolution. While most laser printers

EPSON
EXCEED YOUR VISION

top out at a resolution of 1200 dpi, inkjets can go up to 2400 dpi for black prints.

Only photo printers should be used for photo printing
Not necessarily. All inkjet printers available in the market can print photos at high resolutions. This is not very economical, though, as photo printing consumes a lot of ink.

Future Trends
With most devices going wireless, printers, too, have jumped on the bandwagon. Wireless printers use Bluetooth or Wi-Fi to connect to a computer. This can ease the clutter caused by cables. To enable wireless usage, though, the computer(s) need to have Wi-Fi capability. A typical Wi-Fi card for a computer can set you back by a couple of thousand rupees. ∎

💡 What To Look For

Print speeds
Manufacturers always advertise the maximum printing speed in draft mode. Print speeds take a hit as the quality of the print increases. For example, a printer with a print speed of 15 ppm (pages per minute) at draft quality setting drops down to just 9 to 10 ppm while printing at 'Normal' quality. A typical entry-level printer can deliver 9 ppm at draft quality, whereas mid-range printers can print 15 pages a minute! If you require even faster printing speeds, laser printers are the only option.

Print sizes
While most printers support normal paper sizes like A4 and A5, very few printers allow printing up to A3+ size (13 x 19 inches). For most homes and offices, the A4 and legal sizes are adequate. If you require A3 support, ensure you communicate this requirement to the dealer.

Maximum resolution
While low-end printers support a maximum resolution of 1200 dpi for black printing, high-end printers support up to 2400 dpi. For regular printouts, a resolution of 300 dpi should be enough, while for important documents like official correspondence, 1200 dpi is desirable. Photo printing resolutions are identical for all printers, at 4800 x 1200 dpi for a 4 x 6 photograph.

A demo printout
Before you buy an inkjet printer, ask the dealer for a test printout. This facility might not be available with your local dealer, but most printer vendors have product demonstration stores, where you can check out live product performance.

CLICKETY-CLACK

You're touching them all the time—accord your keyboard and mouse the importance they deserve!

Ever thought of "upgrading" your keyboard or mouse? Chances are you haven't. Well, you should. You'll be pleased to know there are lots of options available—and they're all reasonably cheap.

QUESTIONS TO ASK

Do I need a "multimedia keyboard"?

A common tendency is to opt for multimedia keyboards, which are bigger because of the host of buttons they sport to help make multimedia tasks easier. But one very often sees that these "multimedia" features go unused either due to the lack of support by the OS, no proper drivers, or because the person is just too lazy to learn to use all those new buttons! So for a person who doesn't plan on using his computer for much beyond office work, purchasing a regular keyboard is a better choice.

Is an optical mouse better?

Because of the moving parts and an open invitation to dust, ball mice don't last too long in Indian conditions unless you clean them regularly. Optical mice eliminate the moving rubber ball, so they have no openings for dust. Unlike ball mice, optical mice can function on just about any surface except transparent ones. They aren't too expensive either, and you should definitely purchase an optical mouse.

Should I go wireless or corded?

Wireless input devices have become quite popular because of thier plummeting prices. They free you of the tangle of wires and let you place them at a considerable distance from the computer. This is useful when you wish to use the computer as a TV, but wireless devices have their share of woes. Being physically disconnected from the computer, they need to be powered by batteries. You need to have a set of batteries ready to serve as replacements, failing which your input device may not be usable at all. Using rechargeable batteries can offer some respite. A wireless mouse is not good for gamers because of the inherent lag in response, which can make a difference in fast-paced games like those of the FPS genre.

Wireless input devices come in two flavours: radio frequency (RF) and Bluetooth. Devices based on RF have a smaller range than those that work on Bluetooth. Also, Bluetooth is resistant to interference while RF can sometimes be affected by stray radio signals. Don't be tempted to buy an older infrared device—they require line-of-sight and can be quite cumbersome.

Is a laser mouse better than an infrared mouse?

A laser mouse has a higher resolution and sensitivity than an infrared optical mouse, and is better for gamers and graphics designers.

Do you get small mice for laptops?

Yes! Using the touchpad or pointing device on a notebook for an extended period of time can be a pain. Do your hand a favour—buy a little USB mouse.

Future Trends

Work already in advanced stages will allow computers to be commanded by speech in a quiet environment. Natural language and speech recognition are bound to replace input devices in the future. Handwriting recognition is getting more and more mature. Input technology that aids the disabled today is poised to become the norm of the future. ■

What To Look For

Ergonomics

Ergonomic keyboards are highly recommended. You won't feel thrilled when you first use one, but getting used to it is easy. After a few days, your wrists will enjoy it more than you think.

The Preferred Interface

Find out what interface is supported by your computer. Keyboards and mice come with either the PS/2 or the USB interface. USB is plug-and-play, and consumes lesser system resources than PS/2, and most pointing devices support certain additional features when connected to the USB port. (If you have a really old computer without a USB port, use a converter, or add a USB port—or better still, get a new computer!)

Gaming Keyboards And Mice

If you are into gaming, you are better off with specialised keyboards with keys that can be programmed to serve as hotkeys according to a game's requirements. Also, a mouse with higher resolution or DPI is preferred to make fragging a more accurate affair. Some mice have buttons that aid the gamer, and that can also vary mouse sensitivity and resolution on the fly. For a graphics designer, mice with a high resolution are highly recommended because of the greater cursor accuracy.

ONE FOR THE ROAD

Laptops—once considered a luxury—have become indispensable for many

With a large number of colleges and universities setting up their own Wi-Fi hotspots, laptops are an ideal computing solution for students. And with prices going down, now almost matching mid-range Desktop prices, many corporations prefer to arm their executives with laptops, saving not only desktop space but also enhancing productivity by allowing them to work from home.

You now have a wide range of CPUs to choose from, both single-core and dual-core. Many ultra-portables come with single-core CPUs and offer more than a 40 per cent increase in battery life (over dual-core). If longer battery life and portability are more important to you than performance, a single-core CPU is your best bet. But if you need performance more than anything else, go with a dual core.

QUESTIONS TO ASK

Can I upgrade my laptop?

Check to see if you can upgrade some components—namely the hard disk, optical drive, and RAM—to your liking. Also check whether the warranty will hold if the laptop is upgraded, as in addition of extra RAM or hard drive.

What form factor should I opt for?

Very critical factor; if you're buying a laptop, you're going to be carrying it around! While looking at the weight, don't forget to factor in the weight of the charger and other accessories. Ultra-portables—targeted at frequent fliers and others on the go—are very thin, and weigh less than 1.5 kg. The most commonly seen laptops (with 14-inch to 15.4-inch displays) weigh between 2.5 and 3 kg. Desktop replacement laptops needn't be constrained much by weight and size—they won't be carried around much. These weigh above 3.5 kg and can be bulky.

What software is bundled?

Find out whether an OS comes preloaded or if you have to get your own copy. In the latter case, you need to factor in the cost of the OS as well. Check for driver CDs, and look for other software like CD/DVD burning software.

Future Trends

With laptops getting smaller and more powerful, battery life is the next step. With some innovative technologies, laptop manufacturers have managed to squeeze in battery life of up to seven hours. Fuel cells have promised batteries that won't require electricity at all: they use methanol. So when the battery runs out, just top it up with methanol and you are good to go! Methanol is 40 to 60 times more energy-efficient than Lithium-ion.

Fuel cells combine hydrogen with oxygen to generate power; the water formed as a by-product is also utilised to keep the process running. Fuel cells differ from normal batteries in that the reacting chemicals can be replenished. The technology is fast maturing.

Laptops have forayed into the gaming arena—a desktop-only domain just some time ago—in style. The latest laptops have really good hardware to help you run the latest games. Some manufacturers also offer laptops with multiple GPUs for cutting-edge performance. ■

💡 What To Look For

Display size

With widescreen displays becoming popular and going mainstream, all laptop manufacturers are migrating to the widescreen camp. These displays give you better video quality and enhance the experience of watching movies and playing games. Normally, laptop display sizes range from 11 inches to 17 inches. Display sizes below 12 inches are well-suited for people always on the go. The most popular display size lies between 14 inches and 15.4 inches. For a desktop replacement laptop, a 17-inch display would be desirable.

Connectivity options

All laptops have at least a network card, S-Video and VGA/DVI connectors to connect external displays, four USB ports, and a card reader. Some laptops even offer a FireWire port. Parallel and serial ports are hard to find on the latest laptops, but you probably won't need them. There is small variation with reference to add-on cards: some laptops support PCMCIA cards, while other support the newer ExpressCard, which is more energy-efficient and faster. Don't base a buying decision on the basis of an ExpressCard—though desirable, it's not entirely necessary. All laptops today support at least one Wi-Fi standard from among 802.11 a/b/g.

Battery life

Look for a battery life of at least two hours. If you think the standard 6-cell battery on your laptop is not enough, you can go with a 9-cell battery; it lasts longer. A 9-cell battery is bit larger than the regular 6-cell battery, and will protrude to the side of the laptop, but is worth the extra battery life—1.5 times higher.

THE DO-IT-ALLS

MFDs have become the *de facto* document processing choice of most organisations for their sheer convenience

The falling price of laser printers, and the fact that all-in-ones are much cheaper than the individual devices taken together, will shed light on the reasons for the popularity of laser MFDs these days. This is a device designed from the ground up to be space-saving and economical both in terms of power and consumables.

Some might argue that it's not without its shortcomings. If one part of the device breaks down (say the printer), the entire device becomes unusable, or at best partially usable. Another point to remember is you cannot upgrade individual components. However some laser MFDs have large duty cycles (heavy usage) to the order of a thousand prints a day or more. In such cases build quality is supreme and these devices don't break down easily. Most manufacturers also provide on-site support.

MYTHS AND REALITIES
Laser MFDs have higher running costs

One of the most common misconceptions. Consider this: suppose you were to use your office MFD daily to print, photocopy and fax. You would be using consumables (toner and paper) for each of these tasks. The device will use more consumables than a discrete printer (which is used for only one task). This is what most people complain about—without noticing, of course, the multiple uses of the device. Running costs in most cases is actually lower as compared to running discrete devices, and at worst, they will be equal.
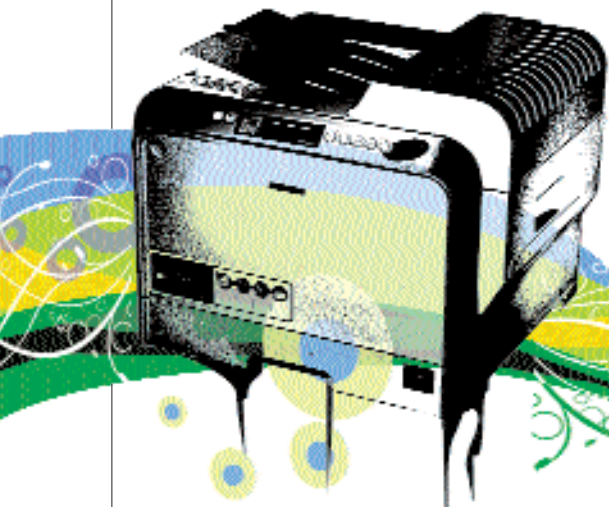
Individual devices perform their specific tasks better

Not really. This has more to do with the fact that people compare high-end scanners to the scanner inside a mid-range laser MFD, or a photo printer's print quality to a regular colour MFD. A high-end MFD will perform as well as discrete devices for the same jobs. It's really a matter of a bigger one-time investment that causes the initial hiccups.

Future Trends

Laser MFDs used to be somewhat of an unusual sight in most offices until around a couple of years ago. Falling prices, coupled with the realisation of the convenience MFDs offer, have made them popular. They could be even more so, we feel, if only for the problem of the high initial costs, which proves insurmountable for smaller business concerns. Sadly, prices haven't fallen much, so there is no silver lining! Yet, we've seen laser printers getting much cheaper.

MFDs will hopefully experience similar price drops. ∎

What To Look For

Define Your Usage: The age-old rule holds good here. First of all, look at what part of the MFD you'll require more service from. Are you going to be printing a lot? Just need a lot of scanning and fax functions? Not all MFDs are best suited for a single task. Some may have heavy-duty printers, while others may use a higher-quality scanner—this is part of manufacturers' product positioning, and there's nothing you can do about it!

Cost per page: As a large enterprise, you probably aren't concerned with the cost of the device as long as your cost per page is low. Heavy usage may see as many as 60,000 pages printed per month from a single printer. In such cases it becomes very important to consider this parameter. Laser toner is one consumable that isn't cheap, not by any stretch of the imagination! Moreover, whether you are printing, copying, or receiving a fax, you are using toner! More expensive MFDs have a higher duty cycle, and will also give more output per toner cartridge. Cheaper MFDs are a smaller initial investment but have higher running costs.

Speed: Important for all business houses, where time means money. Look at the PPM (page per minute) count carefully while choosing an MFD. There will be separate specifications for PPM count while printing, scanning, and copying that need to be checked. While the specifications on paper are not attainable under normal working conditions, they are indicative of performance.

Software: An MFD is incomplete without adequate software. Most laser MFDs will be network-based, and besides this, you'll need software for the individual functions in addition to the mandatory drivers.

On-Site Support: You may buy the best available laser MFD, but the unthinkable can, of course, happen anytime: while breakdowns are annoying, even a small quirk can seriously affect productivity. Imagine your office for even a day without any printing or fax capabilities! And then image lugging the huge thing to a service centre! Nearly all MFD manufacturers provide on-site support; unfortunately, it's not 24/7. However, on-site support with most of the bigger companies is usually good—easily within 24 hours of the breakdown in larger cities, provided there are no non-working days coming up. Insist on on-site support, and check with other customers about the effectiveness and dependability of the support before deciding on a product.

LASER BLAZERS

Laser printers offer sharper, economical and mess-free printing

In a business environment, inkjet printers are seldom used, because their running costs pile up sky-high. Laser printers have always enjoyed patronage when it comes to heavy printing loads, and system admins swear by them for their ruggedness, economy, and good-quality printing.

QUESTIONS TO ASK
What are the different types of laser printers?

Mono and colour are the two basic types. Depending on workload, they are further classified as personal lasers, workgroup lasers and departmental lasers. Personal lasers, as the name suggests, is your typical "by my side" printer. Workgroup lasers are for a small group of users - up to 20 people. Departmental lasers are monstrous, copier-size printers with features such as collation and stapling, and are generally deployed for a large department - 50-odd people.

Why not an inkjet printer?

Inkjet printers, though relatively cheap, don't fit the corporate gamut of activities. Most inkjets are designed to handle small to medium printing loads. They baulk at heavy printing loads. Laser printers are designed to take quite an amount of thrashing, and deliver under heavy loads too. Further, inkjets have a higher cost per page. Lasers can deliver less than a rupee-per-page equation.

I'm buying a network printer. What should I look at?

Check the amount of available memory, also called the buffer memory. For a small group, 32 MB is more than enough; however, if the printer has to be deployed for a larger group, opt for a higher amount of memory. The memory requirement will also depend up on the type of documents being printed: regular Word and Excel documents are smaller in size, so 32 MB is more than enough. If the documents to be printed are image files, CAD drawings, etc., the memory requirements will be higher. Also check the administration software provided with the printer; remote administration saves a lot of trouble and hence the interface has to be good, not to mention the available granularity of administrative options.

What interface and operating system support is available?

Most printers work on USB 2.0. Look for additional or optional interfaces such as Ethernet when deploying for larger group. OS support is a must; if you get drivers for your OS, well and good—you need not worry about downloading them from the manufacturer's Web site. Take all OSes into account, and don't forget Windows Vista is on its way.

Future Trends

Other than the usual differences between colour and monochrome laser printers, one unique difference is in the category of colour models: one pass vs. multipass. In one-pass, the page makes

LEXMARK

a single pass over all the four toner cartridges that deliver the four primary colours (cyan, magenta, yellow and black). This helps in faster printing. But the story is the opposite with multipass: here, the sheet travels a longer path, going through four printing phases (one for each colour). This reduces the cost of the printer, because there is only a single drum for all the toner cartridges, whereas a one-pass printer needs a drum for each toner colour.

One-pass printers currently account for only 46 per cent of the market; but they are clearly the way of the future, and several brands are now bringing these printers under entry-level models. Most manufacturers will have to go the same route if they want to stay in the battle. ∎

💡 What To Look For

Resolution: In most Laser printers, the resolution generally tops out at 1200 dpi. This figure might look laughable when compared to inkjets; however, it's more than enough for a crisp printout.

Print speed: The claimed printing speed is generally hard to achieve in a real-world scenario. Laser printers also go through a process called warm-up where, before the printer prints the first page, it takes some eight to 10 seconds for initialisation. If you need a fast printer, pay attention to the warm-up time: every time the printer goes into sleep mode, it requires a warm-up cycle. Typically, entry-level laser printer can print 15 pages per minute; mid-range laser printers go to 25, and high-ends can deliver 40-odd. Choose according to your needs.

Number of prints: The duty cycle is another key parameter. Buy a printer according to your average printing requirements. Buying a high-duty-cycle printer, unless required, is a serious waste of money.

Expansion slots: Today even mid-range lasers have expansion slots for memory and network. If you expect your printing requirements to increase within a few months, then a laser printer with expansion slots makes for a good, forward-looking printing solution.

SHED THAT FLAB

LCD monitors have come startlingly close to their CRT counterparts in terms of visual quality

One of the biggest turnarounds we've witnessed this year has been the sharp rise in LCD monitor sales. 16:10 widescreen LCD monitors have become especially popular. What's even more remarkable is the fact that larger monitors seem to be the in thing. We're pleased with this trend—after all, your monitor is the real showcase of that monster PC!

MYTHS AND REALITIES

▶ **CRTs offer much better viewing:** This may have been true up to a year ago. But over the last six months, we've seen some superb LCD panels making their way into our markets.

▶ **LCDs have low contrast ratios:** Contrast ratio represents the maximum possible variation between the brightest and darkest colours a screen can display at a fixed point in time. While the contrast ratio of an LCD will be less than what a CRT boasts of, this doesn't detract too much from the viewing experience. We've seen LCD panels sporting contrast ratios of 700:1 and even 1000:1.

▶ **LCDs don't last long:** LCD panels admittedly have lower life expectancies than CRTs. However, the life cycle of current LCD panels is another figure that has constantly been only the rise constantly. Most current LCD panels have life spans of 40,000 to 60,000 hours—this means with an average use of six hours a day, your LCD is still going to last you 20 years!

▶ **LCD's get dead pixels easily:** It's true that LCD monitors do get dead pixels (pixels that, simply speaking, don't light up) after a number of years of use (once they've crossed their panel life period). But they do *not* get random dead pixels soon after use! They can, however, have some dead pixels from day one. Still, manufacturers offer warranties against dead pixels. In the rare event that you notice a few dead pixels on your screen while it's in the warranty period, the vendor is bound to replace the monitor.

The Test For Dead Pixels

All LCDs have a certain number of dead pixels that are "allowed" by manufacturers to pass quality assurance. If the number of dead pixels crosses the stipulated figure, then the monitor is scrapped. However you could have the misfortune of selecting an LCD that has a few dead pixels, so watch out!

Ask the dealer to hook up the LCD to a PC. Run MS Paint. Use the "Fill with colour" tool to fill the screen with red. After this, from the View menu, select the View Bitmap option. You'll see a completely red screen. Repeat the same exercise with black, green, and blue. In case of any dead pixels, you'll see a patch with slightly different colouring. In case of a single dead pixel around the corners, you'll have to take a really close look for the change in colour—though in most cases the pixel will appear whitish.

Future Trends

One of the big things doing rounds these days are HD-ready TVs. Many widescreen monitors available in our markets come touted as HDCP-ready (High-Bandwidth Digital Content Protection). This means they are HD-ready, and more importantly, capable of actually receiving HD content (which is protected, and non-HDCP displays won't be able to reproduce it). Although true HD compliance means support for a whopping 1920 x 1080, you can enjoy 720p, that is, 1280 x 720 progressively scanned, on most other HD-ready monitors.

An unfortunate reality is the lack of HD content in India! However, with one of these monitors, you'll be ready for the HD revolution when it arrives. Of course, this needs massive bandwidth, which is still at a premium on our shores. ∎

💡 What To Look For

17 or 19-inch monitors: Remember that 17-inch and 19-inch monitors offer the best bang for the buck. We recommend a minimum of 17 inches irrespective of intended use.

Widescreen or not: Widescreen LCDs mean great-looking DVD content without the ugly black bars at the top and bottom of your monitor. This is because all DVD and HD (High Definition) video content is natively widescreen. With most games supporting widescreen resolutions, it makes sense to go for a widescreen if gaming or movie-watching is your thing.

For image editing applications and regular office use, a non-widescreen is recommended.

DVI connectivity: Important for LCD monitors (not so for CRTs). LCDs being digital will naturally work better with digital connectivity. In case of the older D-Sub connectivity, your graphics solution's DAC (Digital to Analogue Converter) comes into play. DVI connectivity eliminates the need for a DAC. It can also give up to 10 per cent better visual quality. This will be noticeable with movies and games in particular.

TOTAL RECALL

Memory upgrades yield sweet performance increments

The RAM in your PC can be visualised as a highway between the most critical system components—the processor, video subsystem, and memory controller (if applicable).

How much memory is enough memory? The answer keeps changing every few months: while XP works well with 1 GB, the upcoming Windows Vista promises to reward PCs with 2 GB and above. Buying memory today requires careful thought, not only about performance increments but also future-proofing.

MYTHS AND REALITIES

▶ **Better a new PC than new memory:** True to a small extent, but look at the cost involved. The fact is, a memory upgrade can spruce up an older PC with a performance hike of up to 35 per cent!

▶ **All memory with heat spreaders is good:** While it's true that fast, low latency memory sticks come with heat spreaders, all value memory doesn't require such cooling solutions, and may heat up faster with such heat spreaders

due to lack of ventilation. What happens with ultra-low-latency memory is that the heat generated by the chips is transported away by the heatsink solution. In the case of value memory (which doesn't heat up as much), the heatsink prevents air circulation, which can actually cause the memory to start overheating.

▶ **Memory is memory:** Totally untrue! Never buy cheap or unbranded memory. Some companies charge you more partially for the brand, but more importantly because of the use of better quality and reliable memory chips on the RAM sticks. Most BSODs (Blue Screens of Death) and other freeze-up problems are caused by errors in memory banks—an indicator of cheap memory.

QUESTIONS TO ASK
What applications will I use?
Applications dictate memory requirements. Games require lots of memory, as does image editing, video editing, and 3D design and rendering. 2 GB is recommended in these cases. Audio encoding,

DVD playback, and heavy Internet browsing should get along fine with 1 GB. In all cases, consider 512 MB the minimum.

DDR2 or DDR?
DDR2 is pretty much *de facto* these days. If you're assembling a new PC, look only at DDR2. Due to high prices and scarcity, we don't recommend more DDR memory as a PC upgrade. It's better to save up and get a new motherboard, processor, and DDR2 memory later.

Single 1 GB stick or two 512 MB ones?
All motherboards today come with dual-channel support, which effectively

doubles memory bandwidth. Enabling dual-channel mode requires two memory modules with identical clock speeds and densities, and ideally, identical latency timings and memory chips. In such a situation, two 512 MB sticks will perform much better than a single 1 GB stick.

Future Trends
The memory market has been in a state of flux: DDR is costly because it's en route to a phase-out. DDR2 has experienced explosive demand thanks to the acceptance of platforms supporting it. We should see prices stabilising soon. 2007 promises the debut of DDR3 memory. There are rumours about DDR3 replacing DDR2 as main memory, and the new DDR4 and XDR RAM being used as graphics memory soon. ■

💡 What To Look For

Lifetime Warranty: Most memory today comes with a lifetime warranty—product lifetime, not yours! In most cases, the warranty will be three years. Make sure you buy RAM with at least 3-year warranty.
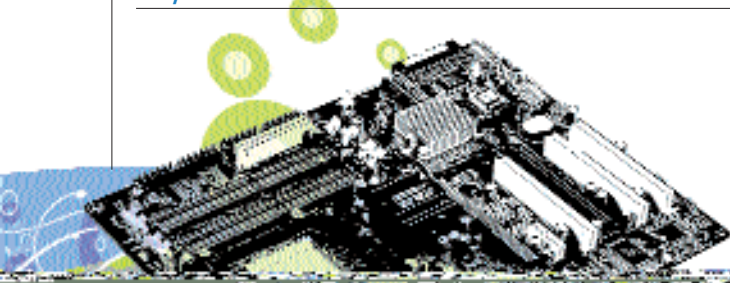**Rated speed:** Has the biggest impact on performance. Opt for at least 533 MHz for DDR2 memory in general. For one of the latest processors, you might need slightly faster memory to avoid it becoming a bottleneck. In such cases we recommend 667 MHz DDR2. If you absolutely have to upgrade your older DDR memory based PC, opt for DDR 400. All Intel LGA 775 socket motherboards will support DDR2 (with very few exceptions), while AMD's 939 processors support DDR memory. AMD's AM2 processors only support DDR2.

Latency Timings: Affects performance by as much as 15 per cent. The lower the timing values (typically, timing i.e. latency figures will have four numbers with dashes in between like 4-4-4-12), the better the memory will perform at the clock speed specified. Very-low-latency memory is expensive, while value RAM has higher timings. Typically, enthusiast (read low-latency) memory will have the timings boldly mentioned on the packaging. For DDR2 667 MHz, a latency of 4-4-4-12 or lower should be good enough. For DDR2 533, look for 3-4-4-8. DDR 400 MHz memory should have a timing of 3-3-3-8, if not lower. Keep in mind that latency figures vary proportionately with memory frequency.

FLAT-FORM FUNDAS!

Performance and upgradeability are restricted by your motherboard... choose wisely!

As opposed to processors and graphics cards that are constantly in the limelight because of the performance gains they bring, a motherboard goes quietly about its business, unobtrusively. However, these hunks of silicon have slowly gained fame for their overclocking capabilities—sure a motherboard allows overclocking, but that isn't the best of their capability.

A motherboard, besides powering all your other components physically, also dictates terms as regards the number of upgrade and component options possible. A good motherboard should be sufficiently future-proof in addition to having a multitude of upgrade options.

We've seen numerous exciting features on offer on the latest boards, a welcome relief from what is typically a more mundane—if not downright boring—category of PC hardware. Goodies like Wi-Fi and multiple FireWire connectors, and actual soundcard-like-quality onboard sound solutions are finally available on some surprisingly affordable motherboards. We've also seen increasingly powerful integrated graphics solutions on some of the entry level boards.

MYTHS AND REALITIES

It's the CPU that's important, any board will do: motherboards provide support, stability, flexibility, and upgradeability to a PC. Spend as much time deciding on a motherboard as you would on any other component.

Integrated graphics are a definite plus: not always true. Instead, you will have to figure out if you want a display card or not. For gamers, enthusiasts, and multimedia freaks, a graphics card is mandatory, making the onboard graphics functionality pointless.

Overclocker motherboards are only for geeks: a motherboard is a motherboard. In fact, overclocker / enthusiast motherboards make great platforms if you can bear the higher price tag. This is because component quality is top-notch (to bear the rigours of increased voltages and clock speeds). Such motherboards will last longer simply because of the component quality and design.

Selling points used by vendors: the number of USB ports, number of channels of onboard sound, etc. These numbers, while useful, shouldn't be deciding factors. After all, you won't be using six USB ports at once. Nor would you benefit from an 8-channel sound setup, when the maximum number of sound channels used for surround sound is still six!

Living up to the expectations of becoming objects of desire (like fast processors and graphics cards) is caus-ing motherboards to become what we fondly like to call "fully-loaded monsters". We conducted a motherboard test last month, and were surprised to see some of the features and nifty additions on the boards we received. We were also surprised at seeing the inclusion of solid-state capacitors and four-plus phase designs on many of the boards.

We also saw the beginnings of more showy boards—copper (or copper-plated) heatpipe solutions on thermally hot areas of the board are much the rage. While we prefer fan-based solutions for their efficiency, such fancy solutions do keep noise levels to a minimum. It seems that the smaller (Micro ATX) and lower-end boards are being replaced by higher-end boards (if numbers are any indication) that are more affordable. A great trend and one we encourage!

What To Look For

Processor support: A motherboard should be capable of supporting processors launched over the next six months. We don't recommend going with older chipset-based boards simply because they are cheaper. You'll pay for it in the long run! Even though the newer chipsets may be slightly costlier than the previous generation ones, the flexibility of upgrade options makes them worth the price.

Support for multiple Serial ATA devices: Serial ATA is the interface of the future. Pretty soon optical drives will also go SATA, and Parallel ATA will collect cobwebs in museums. We recommend a motherboard with no less than four Serial ATA ports.

Dual Channel memory support / Four DIMMs: Most motherboards today support dual-channel memory, but some boards, especially the Micro ATX ones, have only two memory DIMMs. This means memory upgrades are limited. Avoid bottlenecks by looking for such details.

Quad-core support: There are a handful of motherboards that boast quad-core processor support today. Although dual-core processors will easily match your performance expectations, getting a quad-core-ready motherboard will mean that only your processor needs to be changed when upgrading, instead of a motherboard changeover as well.

NEED FOR SPEED CARBON

One Small Step For Games...

The Factory, previously known to the world as Electronic Arts, has struck again. The *Need for Speed* franchise never seems to get tired, setting a benchmark so high that few arcade racers come close, much less threaten the games' obvious superiority. With *Need for Speed: Carbon* (NFSC), EA brings to us a stew of the best of its predecessors, and then some.

The Story

The game starts off where *NFS: Most Wanted* ended—your unceremonious return to your old city of Palmont. A flashback also ensues, informing you that you high-tailed it to Rockport in the first place because you ticked a bunch of people off plenty. You must now redeem yourself in the eyes of your former peers, not to mention one highly cheesed-off ex-girlfriend (played by the hot-but-not-Josie-Maran Emanuelle Vaugier). You need to take over the territories of the other gangs in the city, bringing back the old sense of order (?) that you left behind. If you can't figure out how, perhaps you should read a different review.

The story (and I use the term very loosely) progresses in the mixture of full-motion video and CG that *Most Wanted* brought to us. Unfortunately, while the acting in *Most Wanted* was hilariously tacky, the acting in this one rivals the movie industry's prize turkeys.
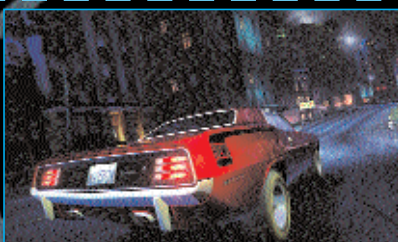
Which Door?

When you start off, you get to choose from three car classes—the Muscles, Exotics, and Tuners—each with its own advantages and quirks. The Muscles are insanely powerful and slide like oil on a banana skin, the Exotics are natural supercars, and the Tuners offer an embarrassing number of customisations. The Muscles are undoubtedly the most entertaining—and if you can handle a Muscle car, you can handle anything. Overall, though, the cars handle pretty much the same way as in *Most Wanted*—rock solid, but with sufficient variations to keep you entertained.

Mi Amigo!

The first addition to NFSC is the crew—your wingmen, who will help you out in your races. You can choose only one per race—either a blocker, drafter, or scout. Blockers will (duh) block your opponents from threatening you, drafters will let you ride in their slipstream for a boost in speed and scouts ride in front of you, marking off the fastest way through the track. The addition is neat, but your wingman's constant chatter can get on your nerves, and strangely, he always manages to come ride next to you the second you take the lead.
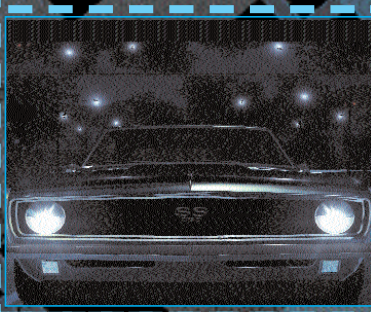
Pretty Pretty?

NFSC's Palmont is a grey city, whose well-lit night-time environments really
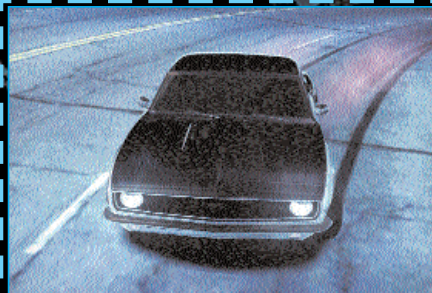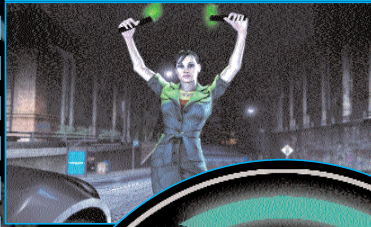
show off the lighting effects the game is capable of. For the looks, *NFSC* is unnecessarily resource-hungry. Cars look slightly better than those in *Most Wanted*, the road looks far worse; there was no justification for the fact that the only card that can run it at 1600 x 1200 and everything turned on, without framing, is the 8800GTX. Criminal.

Another new feature is the over-hyped Autosculpt, which takes the number of ways you can customise your car to obscene highs. Quite nice if you're into that sort of thing, but ultimately, it's just eyewash.

Brass Tacks

To win territories in the game, you have to race against the bosses in a three-tiered event. The first is a basic *Most Wanted*-style race on a city track followed by the Canyon Duel—the most refreshing part of the game. This is a two-stage affair where you first follow your opponent along a winding canyon track, gaining points as you inch ever closer. In the next round, the positions are reversed and you lose more points if your opponent comes close. If your points come down to zero, you lose. And yes, this is the first NFS since NFS 2 where you can fall off a cliff (or canyon track in this case) and lose the game.

Drift races make a comeback again—another lemon of a decision. While handling does change dramatically, these cars are *not* built for drifting well—realistic games like *Project Gotham Racing* or the insanely arcade-ish *Ridge Racer* are much better suited for such activities.

The rest of the game is pretty straightforward, and if you've played *Most Wanted* recently, irritatingly repetitive—including the cop chases. There are some little things that are quite neat—traffic now responds to oncoming racers with nervousness, and it may even be possible that cabbies are the worst of the lot. Even in the Canyon Duels, your opponent starts making mistakes if you stick to his/her bumper for too long.

Bottom Line

If you're just off the *Most Wanted* high, wait a few months before you go near this one—*Most Wanted* is a far superior game, and won't tax your graphics card as much. If you've never played an NFS title, *Carbon* is going to prove quite enjoyable.

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Rating: **7/10**
Developer: **Electronic Arts**
Publisher: **Electronic Arts**
Distributor: **Milestone Interactive**
Contact:
sales@milestoneinteractive.com
Minimum System Requirements:
**CPU running at 1.7GHz or higher,
64MB DirectX 9.0c
compatible video card,
512 MB RAM**

Escape

TRASH THE CHICKEN
Novel Idea To Save Wikipedia

We've heard quite enough about Wikipedia vandalism, so we won't make you hear more about it. Instead, we'll focus on what can be done about it.

A bloke called Ryan something has come up with **www.everytopicintheuniverseexceptchickens.com**. The site is a delightful read–it's in the typical semi-educated (read college dropout) 20-something American style. Hilarious, therefore, from both the syntactic and semantic points of view.

Ryan's idea? People vandalise Wikipedia. The world has a collective anger directed against The True. So, direct all that anger to Wikipedia's page on chickens. In other words, just vent and deface that page, leaving the rest of the controversial encyclopaedia intact. After all, who doesn't know about Nature's Tastiest Birds, as Ryan puts it? (Sorry for the gross-out, vegetarians.)

So here's Ryan's spaced-out sense of humour for you:

"How does it work? Dudes already know about chickens. Ladies also already know about chickens. Does an encyclopaedia really need an article about nature's tastiest birds? You know the answer is 'no it most certainly does not'.

"Instead of an encyclopaedia with vandalism and falsehoods peppered throughout…

Wikipedia becomes a consistently RELIABLE encyclopaedia that covers every topic in the universe, except chickens."

And if the idea were to be implemented, won't Wikipedia get mad? "No, Wikipedia cannot get mad because despite what some Wikipedia editors claim, Wikipedia is not actually alive. No nation on Earth recognises Wikipedia as life."

Wikipedia even shut down the page for a while because of "controversy"! It's up again, though–go forth and defame the bird!

CONFUSION
Vista Ultra-Secure?

Jim Allchin, outgoing Windows development head, recently apologised

Whatever Happened To…
OLED

The OLED–Organic Light Emitting Diode–is, predictably, a light-emitting diode cooked up using organic materials. Its organic composition made it environment-friendly, and when built into a display, it shows off crisp picture quality. Moreover, unlike regular LCD displays, an OLED display doesn't require backlighting, making it extremely energy efficient. OLED displays are also easier to manufacture than LCD or plasma screens.

Unfortunately, the OLED suffers due to its short life-span. The blue OLED that's usually used in these displays lasts only about 5,000 hours–too little to compete with its alternatives. Moreover, any contact with water destroys these babies, making practical use a matter of extreme paranoia. Worst of all, deploying an OLED display in your product means that you have to pay Eastman Kodak for a licence to the technology–a completely distasteful proposition for manufacturers.

So is there no hope of OLED? It's been found out that by using phosphorescent materials, the lifetime of an OLED can be kicked up to 20,000 hours, making it a good bit more viable. But ultimately, if Eastman Kodak decides to keep its death-grip on the technology good and strong, manufacturers would rather stick to the tried-and-tested LCD and plasma displays.

DigiPick of the month

"The Male Computer Zone "

ONLY AUTHORIES COMPUTER SHOWROOM
RECOMMEND MENS ZONE

Last month's winner is

Manas Kumar
Gayatri Nagar
Rayagada 765001
Orissa

Participate and win next month
Information Technology
by Eric H. Glendinning & John McEwan
Published by
Oxford University Press

WIN!
Send in your entry and you could win an exciting gift just by sharing an amusing picture with a tech angle to it. The picture should have been shot by you, and should not have been published anywhere earlier. E-mail your picture with the subject **'DigiPick'** and your postal address **on or before the 20th of this month** to **digipick@thinkdigit.com.** One prize-winning picture will be published each month.

for no little confusion he created: his comments were taken to mean that Vista is so secure, it's possible to run it without an anti-virus. He was responding to questions about whether Vista will be more secure than XP, and Allchin, very irresponsibly, pronounced that his seven-year-old son runs a Vista PC without anti-virus protection. Bad boy, Allchin Jr.

Allchin said that his comments, if true, would decimate the software security market—that they had been taken out of context and misinterpreted.

Now what misguided moron misinterpreted them? Vista's anti-piracy measures have already been cracked. In August, a security researcher demonstrated live several ways to circumvent security features built into Vista. God knows, Vista isn't cracker-safe.

No, Mr Allchin, we don't need an apology—we love our anti-viruses, thank you. Just tell junior to stop getting on the Net without a good firewall and anti-virus in place. And we'll tell you this: we'll probably upgrade anyway. *Build* an anti-virus into Vista for God's sake, if you can.

THE JOY OF GIVING
Passing The Parcel

Innovation on the Web is not dead by any measure. Christmas is approaching, and apart from being the season to Give, it can also be the season to Re-Give. At least that's what **www.regiftable. com**, a new Web site, thinks.

The general idea is that if you're 50 and you've received your 403rd tie as a gift (or even if its your 491st, for that matter), you could gift it to someone else, making for that man's 254th tie. This saves time, money, and the

need to come up with gift ideas. You know what a pain that can be.

A non-profit called Money Management International (MMI), which does consumer education and financial counselling, came up with the site. Quoting a spokeswoman, "Whether or not you're a fan or a foe, re-gifting has become a phenomenon." A survey MMC did last year found that 40 per cent of the gifting population had saved money using this tacky approach to penny-pinching.

Some people at the Web site think it's a good idea, but not everyone does—imagine being re-gifted what you gifted! One woman at the site said her sister "thinks by putting a big bow on her re-gifts, no-one will know they have been re-gifted." Turns out she'd received the gift she had given her sister a year earlier.

We think it's one of those Web ideas that was just waiting for prime-time—one of those ideas that either fizzle out in a couple of weeks or catch on big-time.

TIME-PASS FOR THE RICH
Internet Addiction? We Don't Think So

People in super-rich countries seem hypochondriacs to us— all of them. Every now and then, you'll see something in the press about Internet Addiction, as though it were as serious as a brain

People Who Changed Computing

He Foresaw Y2K

The man behind the [**Esc**] key—which allowed one to terminate the current process—was

Bob Bemer

Bob Bemer. Of course, we use the key in different contexts now, and it might seem insignificant: a key! However, it has been contemplated that without the functionality of "escape", it could have been impossible to agree on and accept ASCII as a standard! Yes, Bemer is often referred to as the father of the ASCII code, without which there would have been no e-mail, no WWW, no video games.

Bemer made several contributions to the field of computer science in general, many of them unrelated. With his own COMTRAN language, and Grace Hopper's (the creator of COBOL) FLOW-MATIC, he helped create the COBOL programming language—and it was Bemer who coined the name. Bemer was the first (in 1971) to identify and warn of the problem associated with using two digits instead of four to represent years, which was later termed, of course, the Y2K or millennium bug.

Other noted contributions include the first publication of the time-sharing concept. In 2003, Bemer received the IEEE Computer Pioneer Award. He died in 2004 of cancer.

Wild Wild Web

Bluff
YOUR WAY THROUGH

The Programmer Interview

The country's software industry is ever-growing, and no doubt most of you out there are preparing yourselves for the numerous opportunities out there—you don't even have to know how to code (you'll be trained eventually, of course)! It's a competitive world, so here we are to provide you with that extra edge to ensure that you shine with top-notch code monkey potential on your big day.

OOP: Object Oriented Programming is a programming model that relies on representing real world *objects* in your code. Using analogies with reality then makes it easier for you to design your program. There's obviously a lot more to this, so make sure you read up before wantonly dropping it into an interview. In general, praise it, for it is good.

SDLC: The Software (or System) Development Life Cycle is a bunch of procedures and documents that take a software project from a neat idea to a saleable product. There's the analysis, planning, design, coding, testing and finally the maintenance of the product. A sufficiently vague statement would be, "I think current SDLC models are long overdue for a revamp."

Garbage Collector: A feature of Java and the .net frameworks, the garbage collector is a process that cleans the system's memory of objects and variables that programs aren't using. So if you're asked how you're going to go about cleaning the memory in, say, C#, it's a trick question—you don't really need to—the garbage collector does it.

Classifieds: A novel concept, and what you'll need if you really try to bluff your way through a technical interview.

Overflowing Bu**ers

Here's an instance where we just *can't* continue to use the stars to block objectionable letters. A reader directed a popular portal to **www.mcafee.com/uk**, which talks blithely about "common vulnerabilities such as SQL injection and bugger overflows."

What's cool is that McAfee sat up and took notice, and actually changed it to "buffer"—which, of course, is what they meant. The line's loss is mourned.

However, we Googled. "Bugger overflow" produces mostly news of this latest finding on buggers—that they can overflow—but there are some innocent sites out there that haven't sat up and taken notice.

For instance, **http://snipurl.com/wwwdec1** states that Adobe had sometime issued an alert stating that a bug in Acrobat has a serious flaw, "and opening a malicious PDF could trigger a bugger overflow."

Even the buggers of the world are probably wondering why, how and when they "overflow."

Keeping It Simple

You know about those Nigerian scam e-mails: "I have a gazillion bajillion dollars and would like to deposit it someplace... I am a king/prince... co-operate... send me your bank details..." You probably also know that hundreds of people have actually fallen prey to these poor excuses for phishing scams. So they're now cutting to the chase. Here's the latest 419er doing the rounds:

"Dear Sir/Madam, I am Mrs Minrada Subaja Rahul. I have a project I'd like to execute with you. Kindly get back to me with your full details. Remain Blessed." Period.

A Doomed Sense Of Humour?

It's Official: Microsoft has developed a sense of humour! We won't reveal all here: head to **www.microsoft.com/technet/sysinternals/Miscellaneous/BlueScreen.mspx** where you can download the Bluescreen BSOD screensaver.

We'll leave most of the rest to you—it's worth a visit!—but here's an actual snippet: "Use Bluescreen to amaze your friends and scare your enemies!" Now that *is* sporty!

But there's (possibly) a tragic twist to it. We also found that *Bluescreen* had crashed, as in the screenshot below... a tragic ending to a sweet development if ever there was one.
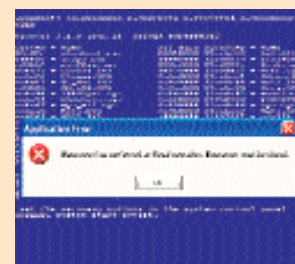
But perhaps not. The site we got this screenshot from is in a ridiculously non-English language, spouting such obscene sentences as "Brata-blizniaka, albo bardzo nieladnie zdublowal sobie." So we didn't understand what was actually happening, and the screenshot could have been fabricated.

tumour. At Google, when you do "internet addiction," you'll get the Refine option which lists out the following: Treatment, Tests/Diagnosis, From Medical Authorities, Symptoms, Causes/Risk factors, Alternative medicine, and more!

Currently in such news is Nichola Webb, a clinical psychologist in Australia. Here's her bleat: "Many are not aware they are suffering an Internet addiction, given society's encouragement of Internet use.

"I've found their Internet usage, in whatever excessive form, often provides a means of escape from their personal problems..."

Studies in the US and South-East Asia are "clearly establishing that Internet addiction is a reality," says Dr Mubarak Rahamathulla of Flinders University, Australia.

We don't like these words—"expert," "clinical psychologist," and so on. Experts say this, experts say that. Why is a lot of Internet use called an "addiction," we ask. We also ask, why spend money and resources on what is patently a pseudo-problem?

Let's compare "Internet Addiction" with smoking. Smoking kills, gaming heals. Smoking causes withdrawal symptoms, surfing doesn't. Smoking is no use, browsing increases awareness. Smoking is for when you're bored, getting online is for when you're in touch with life, the universe and everything. Anyway, that's not the point.

Experts say (here we go again) we're very soon going to reach the next level of evolution. They say we'll be alien-like, with large heads and eyes and small bodies. Experts also say we'll be living in the virtual world all the time, and have little use for our bodies. (We're making all this up as we go along.) In fact, experts say, our brains will be wired directly to the Net.

OK, if we quit the silly made-up-stuff, here's what we genuinely believe: that we *are* evolving—changing—to be more virtual and less real. Does any *Digit* reader seriously doubt that in 20 years time, we'll be on the Internet all the time? What will they say about "Internet Addiction" *then*?

The truth is clear: online is where it's at. Outdoor's overrated. Don't they *get* that?

BREAD, CLOTHES, AND BROADBAND
Comparable To Water

In some state in the US—we forget which—the mayor of a city said Wi-Fi was a fundamental human right. The European Union recently said it thinks that Internet access should be made "mandatory" or something of the sort. And now this: the UN's Conference on Trade and Development (UNCTAD) has said in a report that broadband Internet access "is becoming so vital for businesses that it can be seen as a new utility comparable to water and electricity.

"It's absolutely necessary for countries because without broadband, it is difficult to have e-business," said Genevieve Feraud, one of the authors of the Information Economy Report 2006. "Broadband is so important that we call it a utility which is just as necessary as water,

electricity," she told journalists. Ms Feraud, what about e-business before approximately the year 2000, we must ask.

UNCTAD also did warn that the growing importance of broadband access is "disturbing news for the developing world." Yes, it *is* disturbing us!

Just A Bunch Of Nutters

Pressure, especially with a special issue, is nothing new to us. Hardened by years of the stuff, when Fate tells us to jump, we just ask, "How high?"

But every now and then, even our finely-tuned cranial machinery experiences the odd burnout. Take, for instance, the unfortunate condition of our layout designers—Pillai*ji*, Vijay and Sivalal. It all started when Vijay overdosed on the barrage of advertisements on Internet Radio—Yahoo! Launchcast, to be specific. To this day (well after the cessation of said stream), he randomly chants, "No doubt about it!". We won't give out the advertiser here—they haven't paid us.

And then there was the day Pillai*ji* discovered that if you hit [**Shift**] five times, your PC makes a very silly sound and asks you whether you would like to

enable StickyKeys. Needless to say, we were subjected to no less than ten minutes a day of alternating PC sounds and giggles. And Sivalal… well, Sivalal just *is*.

The rest of us succumbed to our own madnesses too—Nimish, Samir and/or Prakash would often be seen sitting at their PCs into the wee hours, getting their hindquarters fragged repeatedly by the wizened Raaabo. This despite Deepak's impassioned threats of violence.

And the Browne made a boo boo again. Hot on the heels of last month's gem, and in front of the entire team. The laughing shook the windows; "Oh, you're *so* the subject of *Digit Diary* again", he was told. And we wanted to tell you, really, but for the life of us, we simply can't remember.

This pressure, it gets you right in the brain, it does.

DIGIT DIARY

Any technology or telecom ministers or service providers out there listening? We poor slobs labour on with our less-than-256-Kbps connections, and weep on our pillows at night while asleep, dreaming of dedicated T3 lines. We want it. We *need* it. We. Want. Broad. Band.

Please be listening, Mr Telecom Minister and Mr Broadband Service Provider, to honest, law-abiding, tax-paying citizens! Even 3 Mbps in every home will do. We won't complain after that, we promise… OK, how about at least 2 Mbps? ONE? Pretty please?

The eyes brim over. ■

Blog WATCH

So what are people writing about? Zune, naturally. And Vista. Web 2.0 also figures in this pick of blogs

Richard MacManus
http://snipurl.com/dec004
(www.readwriteweb.com/archives/yahoo_time_to_kill_off_web20_brands.php)
Yahoo: Time to Kill Off Flickr, del.icio.us and Other Web 2.0 Brands
…Yahoo could also try and re-brand Photos as Flickr, but that is a more risky proposition… If you look at how they've integrated RSS into their products - MyYahoo, news, mobile, email - they've done that extremely well and without scaring off non-technical users. Now, I'd love to see Yahoo integrate other 'web 2.0' technologies into their mainstream product range - Flickr into Photos, del.icio.us into myweb, etc…

Paul Roberts
http://snipurl.com/dec006
(http://weblog.infoworld.com/techwatch/archives/008930.html)
Is Zune the Next BOB?
Is Microsoft's Zune turning into Bob? According to early press reports following the launch of the iPod Killer, it may well be. We all remember Microsoft BOB -- right? That disastrous effort to change the whole desktop GUI metaphor to something more cute and family friendly? Well, Bob didn't go over so well and the project, plus its smiley face logo have become synonymous for ambitious Redmond projects that flopped.

RJ
http://snipurl.com/11yn0
(www.dailytechnobabble.com/2006/11/09/4-reasons-why-windows-vista-is-just-not-worth-it)
4 Reasons Why Vista Is Just Not Worth It
1. No new features or speed boost - No kidding, it's true! Windows Vista won't run Microsoft Word any faster, won't make your presentations look any better, and if my own experience is any indication then Vista is not going to make managing your PC any easier either. If Microsoft sticks to their new anti-piracy plan then corporations will be having to setup whole new license management systems to deal with Vista…

David Haskin
http://snipurl.com/dec009
(www.computerworld.com/blogs/node/3964)
The future of Zune and iPod
…In order to enjoy the benefits, I put up with wretched, unstable software. And sometimes, the DRM software itself is balky and frustrating to use. Apple, but contrast, has made iTunes and iPods an easy-to-use unified entity. Now, MS has done the same thing with Zune. But it's turned its back on PlaysForSure and is offering a closed ecosystem similar to Apple's—with one exception: Users can either subscribe to music or buy it outright, an advantage over Apple's buy-only approach…

November 2006

For Lots Of Dollars Less!

Team Digit: Why don't you give a few full-version software instead of many trial versions? Full-version software such as Nero, WinZip, MS Office, etc. are helpful. Trial versions are useless.

Please tell me what the code is for checking the total duration talked on a Nokia phone. I have to sell mine, and my friend is asking for the total talked hours, since battery life is dependant upon this.

When are you going to publish all the previous *Fast Track* editions on your CD? You know, they're really very helpful!

Biswadeep Mishra
Bhubaneswar

Dear Biswadeep,
Nero 7 Premium Reloaded costs Rs 3,600. Office 2007 costs Rs 22,000. (We're mentioning the US prices.) Do you really think we can give software worth thousands upon thousands of rupees with a magazine that costs Rs 125? Secondly, trial versions are not "useless": they're there so you can try them and buy them if you like them.

Regarding a code for a Nokia phone that tells you how much you've talked, there is no such. Please tell your friend to buy your phone based on trust!

As for the *Fast Track* series, we've bundled them with this issue. Hope you find it useful!
– Executive Editor

Tall Claims, Short On Delivery

I am doing some research work and will be required to keep on opening various sites and their links if required. So I asked my dealer whether opening a site

will be counted in downloading or not. The answer was "No, until and unless you save something to your computer, it will not be counted." So I thought this scheme very attractive. But now I have come to know that opening a site is also counted in download. This disturbed me. Tata Indicom customer care is also no use; half of them say "it will be counted as download," and half say it won't be. No-one is able to explain the exact meaning of the "Unlimited Surfing" they are offering.

S S Dadwal
Jamnagar

Dear Mr Dadwal,
We know that some broadband providers in this country rip off consumers, that their customer support is not good enough, and so on. We cannot directly help you, of course, but we're just hoping that someone working with one of those companies is reading this! In fact, "broadband" in India, in its current state, is itself a rip-off!
– Executive Editor

Just Visit The Forum!

I have all the old issues of *Digit* magazine and the CDs intact. I was maintaining it as a valuable collection. Due to some personal problems, I am unable to keep it going. I want to dispose of it to anybody who will put it to good use.

I see many queries in the magazine regarding old issues. Please help me find a person who wants old issues.
Dinamanni

Dear Dinamanni,
Please post your query on our forum (**www.thinkdigit.com/forum)**, and someone might respond. Also, once you visit our forum, you'll find that a lot of questions you might want to ask can be answered there!
– Executive Editor

DOS Outdated, Sorry

I'm a frequent reader of your mag: since August, I've read all your editions, and I found your August and November editions very knowledgeable. I like the way you do all your tests on motherboards, processors, graphics card, laptops... Actually, last month I bought an ATI graphics card based on your tests and I'm quite happy with its performance.

I have always found your *Fast Track* editions quite knowledgeable. I want you guys to issue a *Fast Track* guide to DOS, and if that isn't possible, then at least include DOS in your *Tips & Tricks* section.

Hoping your team will reply soon... thanks, and keep up the good work!
Akbar
Delhi

Dear Akbar,
Thank you for your kind words about our magazine. As for DOS, we can neither publish a *Fast Track* on it, nor can we do a *Tips & Tricks* on the topic–simply because not enough people would be interested. We do apologise, though, for not being able to comply with your request.
– Executive Editor

Is Windows *All* That Crappy?

I have been running a computer hardware business for the past nine years. In the last six months, I've noticed that the Linux Operating System has many invaluable features that Windows does not offer even after paying a premium for it. I would like to bring your attention towards some features of Linux that you must publish in your coming issue. These are as follows.

1. First, Linux is free operating system, which can be installed and copied without any fear of piracy because it is under GNU. Windows is a paid operating system, that can be installed only on single machine and it neither can be copied nor distributed.

2. Linux is virus-free, while Windows has every chance of virus because it's architecture is open, anyone can write a virus to destroy the operating system as well as data.

3. Linux can be installed on even a Pentium II, while to run Windows XP and later on Window Vista, everyone needs a hi-end computer with every new version of Windows, while better performance can be achieved by using Linux at the maximum on Pentium III based machine with minimum RAM and graphics.

4. Windows requires separate drivers for the motherboard, display adapter, and sound card, while Linux has everything on a single CD, and that too, it's FREE !!!

5. The Internet can be used safely on Linux without any fear of viruses, while Windows has Internet Explorer, which every time has bugs and vulnerability of being corrupted with or without virus.

6. In Windows, there is no image

Inbox

manipulation software, while Linux has many image manipulation as well as graphics software—FREE.

7. To play audio CDs or MP3s or DVDs in Windows, you need Windows Media Player, Winamp, Power DVD, or WinDVD, while Linux has already installed many software for this purpose.

8. To burn a CD / DVD in Windows, you need Nero, while Linux has three to four CD / DVD burning software already.

9. The Evolution software that Linux provides is 70 per cent superior to Outlook Express.

10. Windows need not only a high-end computer for audio / video editing, but also costly software for it. Whereas, on a Pentium III using Linux, it's all possible for FREE!!!

11. To hack a password on Windows is quite easy, while data decryption and hacking passwords in Linux is almost impossible.

12. Apart from buying Windows, the user needs a useless software called MS Office, also, that is high-priced. Star Office and Open Office.org provide much more benefits to customers, under GNU!

13. For chatting, we need separate messengers for MSN or Yahoo, while Gaim in Linux gives facility to chat simultaneously in Yahoo MSN, and all other chat service providers.

I am amazed that when such features can be given under GNU, why does Microsoft charge so much money for the same features? I would like you to print this to open the eyes of customers and save them from being cheated.

Rishi Kalra

Dear Rishi,

I must tell you that most of your points are misinformed, which I shall address one by one.

● #3 is not really true: most Linux distros today need a decent setup.

● As for #4, if you have non-standard hardware, good luck finding Linux drivers for them! Driver support is one of the things that has plagued Linux for many years now.

● #6: You have MS Paint in Windows, which is useful enough for many purposes. Plus, there are open source software or freeware that you can install on Windows!

● Regarding #7, we must remind you that WMP and Winamp are also free.

● #8: You have drag-n-drop burning in Windows XP.

● In #9, you've quoted a "70 per cent" figure, which is unsubstantiated.

● In #10, you've said that audio and video

editing using Linux is possible for free. We must ask you what software you're using. Besides, VirtualDub for Windows is free.

● We should tell you that you're completely wrong in #11 when you say that Windows passwords can easily be cracked.

● You can use Star Office and OpenOffice, which you've mentioned in #12, on Windows too.

● As for #13, just use Gaim on Windows! Finally, Windows stands out because of better support and easy usability, amongst other things. I do not deny that Linux does hold certain advantages, but you cannot rule out Windows' convenience totally—not as yet.

– Executive Editor

Thanks For Everything

Hello *ji! Ji main taan Digit da deewana haan!* I have been reading your magazine from my 7th class. Now I am in 2nd year of my computer engineering diploma course. Till 11th, sometimes, I borrowed issues from friends, and after 11th, my friends now borrow from me. Your magazine is kool, awesome, wonderful, great, unmatchable!

But I want to ask you to please include some full, old, less-hardware-requiring games like *Metal Gear*, James Bond's older versions, etc. Please also include some tutorials, notes, etc. on C, C++, Java, and some interesting secrets of Windows that people don't normally know about.

And finally, lots of warm wishes from me to all members of your team, especially Agent001. I like him. I think he is the wisest computer user in the world—he knows what to upgrade when, how, with what, and at what cost. So keep it up, *doston*!

Davinder Sharda
Punjab

Dear Davinder,

Ji aapka shukriya. Thanks for your passionate mail—it's such mails that keep us on our toes, twenty-five hours a day, 32 days a month! We're really glad you've been enjoying whatever we've been publishing.

As for games that require lower hardware configurations, you *can* find many of them on our CD/DVD—you just haven't browsed through them carefully enough! And when it comes to programming tutorials etc., we're mulling over the idea of *Fast Track* editions on these.

Once again, thanks for writing in!

– Executive Editor

"Customer Service"!

LETTER OF THE MONTH

This is about "pirated" software: I prefer to call them non-genuine software instead of "pirated." I haven't seen any ads in *Digit* for software because they—the software sellers—know it's a waste of money: nobody purchases genuine software. Mostly, if I ask for genuine software, I have to pay more, and get the same thing in better packing.

Shop-*wallah*s say they have to check whether the CD is working properly or not and to avoid complaints from customers, and that's why they open the packaging. Talk about Customer Service!

Coming to the point, will you please publish the names of a few shops in Mumbai who can be trusted and sell genuine software? I also request our dear Agent 001 to take some trouble for the sake of subscribers who want genuine software.

Another thing: I was under the impression that I had a genuine OS installed on my computer, as I had insisted on it and paid when I purchased it two years ago. However, while installing IE7, I found that it is not genuine! I could not argue with the dealer after two years—will the *Digit* team help me?

P V Vithlani
Rajkot

Dear Mr Vithlani,
We know that piracy is rampant in India as in much of the developing world, and all we can do is hope that the situation will improve in the years to come. Who has the energy to fight all the software pirates out there?

It is up to the software companies to combat piracy. We, as a magazine, can do nothing but make our readers aware of the situation.

As for genuine software, you're sure to find some shops at Lamington Road in Mumbai if you look around—we've seen some even here in Navi Mumbai. Also, look in newspaper classifieds. In addition, there have indeed been ads in our magazine by suppliers of genuine software.

We're happy that more and more readers like you are bothered by the piracy problem, putting an end to the "*chalta hai*" attitude.

– Executive Editor

Mebibytes And Megabytes, Mozilla And Mice

1 Which of the following is *not* a feature of IE 7?
a) Tabbed browsing
b) RSS Feeds
c) Page Zoom
d) Spell check

2 Which of the following is *not* correct for "SOAP"?
a) Satellite Orbit Analysis Program
b) Symbolic Optimal Assembly Program
c) Simple Object Access Protocol
d) System Output Analysis Program

3 Yahoo! is the most visited site. Who displaced it for a while this year?
a) MySpace
b) Google
c) MSN
d) Orkut

4 In a September poll, what percentage of the US population said they knew something about nanotechnology?
a) 2   b) 8   c) 20   d) 41

5 How much is a Mebibyte (MiB)?
a) 1000 x 1000 bytes
b) 1024 x 1024 bytes
c) 9999 KB
d) We made up the term!

6 Which of the following women have *not* contributed to computer science?
a) Margaret Boden
b) Grace Hopper
c) Ada Lovelace
d) Belinda Gates

7 Which company has come up with its own version of Mozilla Firefox?
a) Apple
b) Red Hat
c) Microsoft
d) Sun

8 In Spain, a judge recently acquitted a P2P-er, saying his aim was...
a) "not to gain wealth but to obtain private copies"
b) "not to kill but to share"
c) "in harmony with our Constitution"
d) "in keeping with the Spanish love of music"

9 Which of the following is not used in mice?
a) Laser   b) LED
c) RF   d) SCART

10 SLI technology enables the simultaneous use of two...
a) Graphics cards
b) DVD-Writers
c) Hard drives
d) Processors

11 The world's first TeraFLOPS Computer was decommissioned by the U.S. Government in this year. What was its name?
(a) Blue Gene/L
(b) MareNostrum
(c) ASC Purple
(d) ASCI Red

Got an interesting question? Send it in with the answer to **TQ@thinkdigit.com** Mark "TQ" in the subject area.

Did You Know?

In 1988, Robert Morris, a 23-year-old student at Cornell University, wrote the first internet worm in 99 lines of C code. It infected more than 6,000 computers. His father, Robert Morris Sr., was a computer security expert with the National Security Agency at that time!

Answers

1. c) Page Zoom
2. d) System Output Analysis Program
3. d) MySpace
4. c) 20
5. b) 1024 x 1024 bytes
6. d) Belinda Gates
7. c) Microsoft
8. a) "not to gain wealth but to obtain private copies"
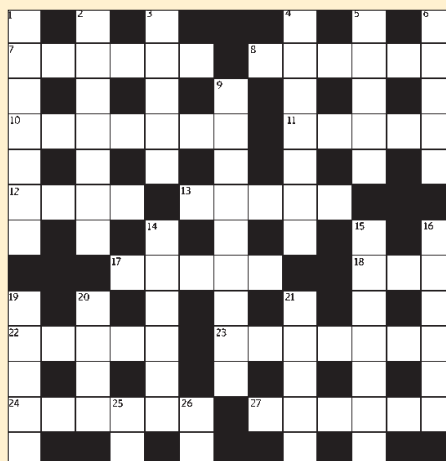9. d) SCART
10 a) Graphics cards
11. d) ASCI Red

Crossword

ACROSS
7. _____Line- dedicated line providing 24/7 internet connection(6)
8. Short for Simulation Language(6)
10. Systems designed specifically for playing video games(7)
11. Option under 'File' menu to put text or graphics on paper (5)
12. Erbium-doped Fiber Amplifier(abbr) (4)
13. Electrical switch controlling electrical energy - NO or NC?(5)
17. Mistake(5)
18. Row Address Strobe(abbr)(3)
22. Sudden failure of a software application or operating system(5)
23. Ongoing project in support of an open source IDE(7)
24. Computer display usually referred to as the 'monitor'(6)
27.------ - oriented or adaptive programming(6)

DOWN
1. Pop-up ------- - software tool preventing pop-up ads(7)
2. To 'increase in size' using Zoom tool in Corel Draw(7)
3. Codename of Xbox 360s processor(5)
4.'D' in LCD (7)
5. -------IT Services- India's largest MPLS VPN network(5)
6. E - ------- refers to old computers or cell phones thrown in trash(5)
9. Game ------- or creator or programmer(9)
14. A Gopher tool for finding files stored on anonymous FTP sites(6)
15. Radio or photo-------(7)
16.Same as 27 across(6)
19. Electronic Controlled Acoustic Shadow System(abbr) (5)
20. Policy Analysis of Internet Routing (abbr)(4)
21. Open or ------ a file(5)
25. Enterprise Architecture(abbr)(2)
26. Windows − or 'New Technology'(abbr)(2)

Crossword by **Nitta Jaggi**

Win!

No winner for last month, so we get to keep the prize!
Send in your entries with your contact details to **TQ@thinkdigit.com** on or before **December 20.** One lucky participant will win **Programming Interviews Exposed** By John Mongan & Noah Suojanen

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Last Month's Solution

Tabloid TECH

People And Events That Grabbed Headlines—For Better Or For Worse

The Decent Old Chap

Steve Ballmer, who probably put the "$" in M$, was asked a simple question while he was here: "Is free software the future of India?" He resorted, as you'd expect, to circumvention, spouting stuff like "software businesses can look at a number of revenue streams such as lower cost hardware... advertising..."

Very much on the other hand, Bill Gates recently hugged a tall, live penguin.

No, we made that up. But look at how he's mellowed: in a recent, already-famous mid-November interview with talk show host Charlie Rose, Mr Gates didn't sound his former aggressive self at all - the kind of sarcastic self that once said, "there's nothing the iPod does that makes me go 'oh, wow, I don' think we can't do that'." Here's to give you a flavour of the born-again Microsoft chairman:

● About livesearch.com, he conceded it "wasn't the first time" Microsoft had been slow.

● He said Google Earth was fantastic, and "what they do is free and a huge benefit for all." He also said, "we're going to compete in search," and even continued that this competition would be good for the industry.

● About the iPod: "phenomenal, unbelievable, fantastic." Is that really Bill Gates talking? You'd better believe it! Microsoft's goal with Zune is "more modest" than

being a pod-killer, Gates said. "We can get ~some~ of the new users and ~some~ of the switchers."

Yes, Gates has come a long way as far as brain or tongue chemistry goes. He's exuding a laid-back, almost Wodehousian air now: things are moving along fine. Everything's good. The sun gently warms my back. All's right with the world.

Pamela's Poker Plug Pulled

Pamelapoker.com now redirects to doylesroom .com. It was doylesroom.com in the first place; the former Baywatch Babe says she wanted to make "a quick buck" when she took it over. She cites legal red tape and "too many rules in the USA." How sad. No busty cutie any more - a shootfest-hardened cowboy now adorns on the main page.

As a matter of fact, Ms Anderson's diary was brimming over with plans for revealing photos to be featured on the site alongside games of poker. To popularise the game as one of skill and not of chance, no doubt. But, "Too many shady areas. I really don't want to encourage people to gamble. This must be turned off. It just didn't work out. Even in my heart."

Something is amiss there. Yeah, the anti-gambling sentiment smells of saccharine.

And "my heart sounds funny: we hadn't realised this bimbo does have internal organs...

No Blocking This Ad

Adblock is popular with Firefox fans, but no-one wanted to block the ad we're talking about. In fact, it's not even an ad on a page: it's a page ~for~ the ad. The ad itself is indecent enough for us clean folks not to give you the URL, but Carl's Jr., we'll tell you, is a burger chain that invited Ms Hilton of Paris fame to do an ad for them. (Tip: Google "carls jr".)

Now the news here is that with all the oodles of porn on the WWW, hormonal men ~still~ flocked to the Web site to watch Hilton do her act, promoting spicy hamburgers. (We're ~assuming~ it wasn't non-hormonal women.) The servers went down for hours as hot-blooded males (who'd already

seen Hilton doing the nasty!) flocked to the site. (Even though Hilton wasn't nude; besides, she ate a hamburger, not a banana.) The site might be up by the time you read this - Google some stuff and try to get at it. We weren't able to.

Sex sells, what?

For any queries regarding the Digit Patron programme, e-mail us at **digitpatron@jasubhai.com**